RESEARCH REPORTS FROM THE PROGRAMME FOR BELIZE ARCHAEOLOGICAL PROJECT, VOLUME TWO

Edited by:

Fred Valdez, Jr.
The University of Texas at Austin

Contributors

Kirsten Atwood
James E. Barrera
Angeliki Kalamara Cavazos
Robyn Dodge
David J. Goldstein
Robin Goldstein
Liwy Grazioso Sierra
Jon B. Hageman
Brett A. Houk
David M. Hyde
Erol Kavountzis
Brandon S. Lewis
Maria Martinez
Antonio Padilla
Deanna M. Riddick
George Rodriguez
Dara Shifrer
Lauri McInnis Martin
Rissa M. Trachman
Debora Trein
Fred Valdez, Jr.
Jason M. Whitaker
Oliver Wigmore
Kimberly T. Wren

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Contents

SITUATING RESEARCH: AN INTRODUCTION TO THE PfBAP RESEARCH REPORTS (Vol. 2)

Fred Valdez, Jr., The University of Texas at Austin

INTRODUCTION

The reports presented in this volume represent much of the research from the 2007 field season of the Programme for Belize Archaeological Project (PfBAP). The 2007 season was the 16th year of consecutive research in Belize by the PfBAP. All archaeological research was conducted in northwest Belize in an area known as the Rio Bravo Conservation and Management Area (RBCMA).

More than 260,000 acres of the RBCMA area is owned and operated by the Programme for Belize (PfB), a wholly owned and managed Belizean conservation organization (Figure 1). The PfBAP works in collaboration with PfB and is charged with the task of documenting sites, determining research avenues, and reviews protection measures for all cultural property concerns.

It is among the Programme for Belize Archaeological Project's research agendas to conducts its research with the intent of producing an integrated view of the history and cultural evolution of northwest Belize. The primary research interest was originally the Maya Period (of ca. 1000 B.C. to A.D. 1400), but has been broadened to include pre-Maya data as well as early Historic Period activities. The PfBAP's research property includes urban centers, towns, villages, and hamlets (Figure 2) of the prehistoric Maya. Approximately 70 such sites have been identified of which five are currently categorized as "cities." The region also includes several known early historical settlements, Holotunich (Ng 2005) and Qualm Hill (Cackler et al. 2007). The PfBAP is committed to sampling each level of social occupation within the settlement hierarchy of the prehistoric Maya. Site functions, occupational specialization, and chronologies of the region are of critical interest as well. These efforts remain part of the long-term research interests.

BACKGROUND

Since its initial field season, in 1992, the PfBAP has maintained an annual research season effort every year. The PfBAP was initially organized as one research project with various research interests each season. The program was re-organized in 1995 as an umbrella research entity with several "independent" research programs under its permit from the Government of Belize. The new format allowed for each independent entity to pursue funding per research program and interests.

A significant effort was initially placed at understanding the geography of the region including some effort at noting micro-environments. Three well-defined topographic features define the Rio Bravo Conservation and Management Area. The La Lucha

Uplands and Rio Bravo Terraces, the Rio Bravo Embayment, and the Booth's River Upland and Depression are among the significant features affecting life and settlement in northwest Belize. Among these components we find a microcosm of the variability found elsewhere in the Maya Lowlands (cf. Dunning et al. 2003). It is the biological and topographic diversity of the RBCMA that provides the PfBAP many opportunities to witness and examine the various adaptations by prehistoric and historic communities. The PfBAP intends to sequence these adaptations over the course of occupations from Middle Preclassic beginnings (for the Maya) through Postclassic activities.

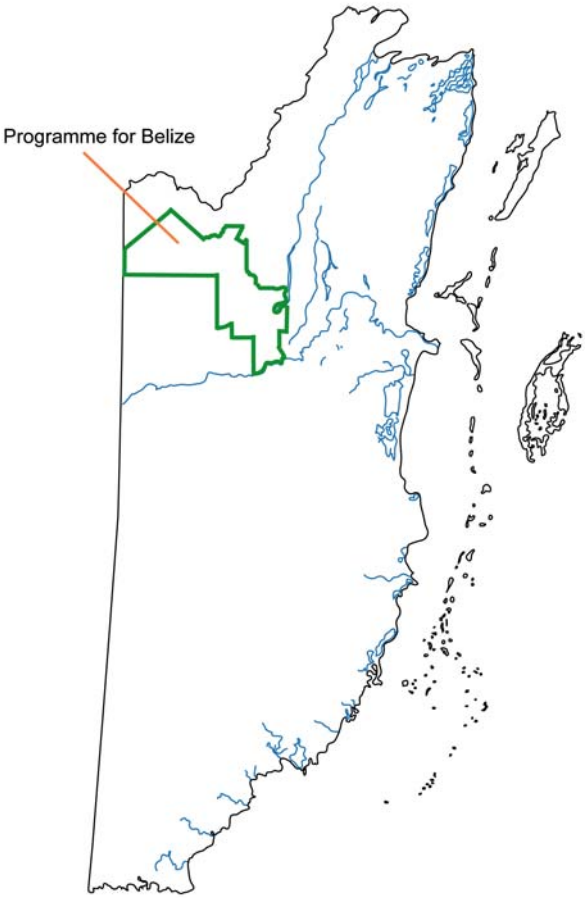

Figure 1. Map with location of project area in northwest Belize.

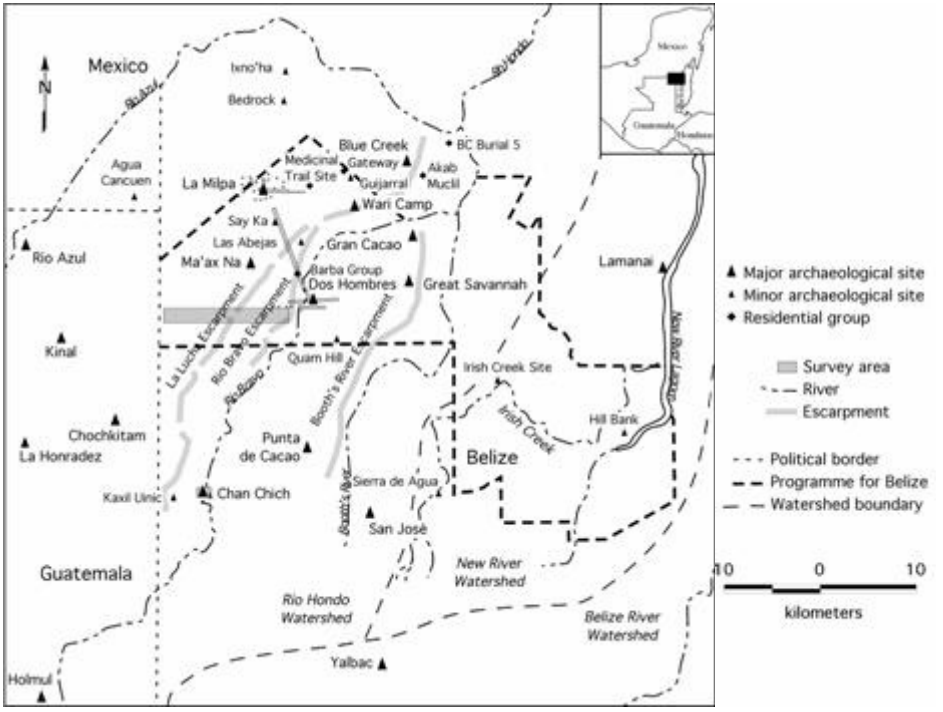

Figure 2. Map of archaeological sites in the PfBAP area. Map version by Rissa Trachman, courtesy PfBAP.

PROJECT ORGANIZATION AND RESEARCH PROGRAMS

The PfBAP serves, as noted above, as an umbrella organization under which several projects operate. Among the various (independent) projects are:*

Project (title/name)*	Director(s)
LaMilpa Group A	Valdez
LaMilpa Group B	Houk
La Milpa, South Groups	Lewis
La Milpa East	Weiss-Krejci
Medicinal Trail	Valdez
Dos Hombres-La Milpa Transect	Hageman

* All "projects" operate under the PfBAP and share a common research facilty, the Richard E. W. Adams Archaeological Research Facility. Each project may also have Field Directors and Excavation Directors beyond the listed Project Directors.

Although each project/program functions as an autonomous unit in terms of revenue procurement and staffing, all operate under the conditions of the permit issued to the PfBAP by the Institute of Archaeology (IoA) in Belize. All programs also share facilities and data as pertaining to the general objectives of the PfBAP as a regional research endeavor.

Previous research seasons have been reported through a variety of venues. A 15-year bibliography of the PfBAP's productivity is currently being compiled as a source of the program's research interests, endeavors, and success.

NATURE AND SIGNIFICANCE OF THE PROJECT: Research Design and Methods

The PfBAP continues to refine its regional research procedures and methodologies as well evaluate the effectiveness of the regional approach for the of the prehistoric Maya. The survey methods employed by the PfBAP follows the strategy that was successfully utilized during the first decade of the project. Mapped roadways, logging paths, and oil exploration transects are often used as the starting points for survey trails and mapping grids. Reconnaissance survey from known points along the Gallon Jug Road is also utilized as a strategy. The sampling procedure is similar to typical site-based methods, but operates on a larger scale. All levels within the settlement hierarchy and all possible levels of major cultural institutions will be mapped and tested.

The PfBAP archaeological work is of great relevance and importance to the PfB (for both land use and environmental planners), in that the preservation of cultural and ecological resources is increasingly dependent on ecotourism and renewable resource strategies. Both of these depend, at least initially, on specific identification of the region's resources including cultural components such as archaeological features and sites. The PfBAP research can also suggest efforts that can be made to mitigate the effects of modern human populations on archaeological sites as the PfB incorporates them into tourist-based activities.

The PfBAP has several broad-based research goals including: 1) defining regional patterns of cultural development and the decline within the study area as reflected in the individual histories of cities, towns, and smaller sites, and 2) to use these observable and defined patterns to provide insight into several major research problems in lowland Maya archaeology.

The regional approach remains appropriate for investigating processual, postprocessual, and culture-historical questions as this approach allows us to see Maya urban centers and their supporting infrastructure in a more comprehensive fashion than has been traditionally possible with a single-site focus. The PfBAP has several single-site focused programs along with surveys, and more regional-based research that serve the regional study aspect. The PfBAP’s research strategies are not intended as a criticism of single-site research, rather regional research can only be accomplished with integration of “single-site” research as a component of the investigations.

LONG-TERM OBJECTIVES

A long-term result of the PfBAP will be an understanding of the structure, functions, and development of part of a Maya regional state. The focus or perspective, of course, will be from the northwest Belize region, but likely applicable to other lowland regions. While the reconstruction of a Maya regional state in this NW Belize zone will be compared with developments in other areas, one must continually bear in mind the many differences in environment and political history that affect the growth and decline across the lowlands.

A cultural-ecological perspective remains an important part of our integrated research design and will provide information on ancient agriculture and land modification, both of which will be of interest to modern tropical specialists, agricultural planners, as well as land-use experts in the Maya area and other parts of the Americas. The PfBAP, however, also seeks to understand the interplay between human effects/adaptations as well as natural changes in the local and regional environments.

REVIEW OF THE 2007 SEASON

Various studies conducted during the 2007 field season are reported by the specific directors and/or field assistants. This introduction is provided as the underlying theoretical interests of the PfBAP and as a cursory overview of the significant archaeological research completed under permit issued to the Programme for Belize Archaeological Project by the Institute of Archaeology in Belmopan, Belize.

Several areas of the RBCMA were investigated archaeologically in the 2007 season. Under the PfBAP umbrella and reported in this volume were the investigations at the La Milpa site center (Group A, B, and southern groups), La Milpa support areas (small settlements including La Milpa - East and Medicinal Trail), small site survey and testing along the DosHomres - La Milpa transect and the agricultural(?) terraced site of Guijarral. Other important research conducted this season was an opportunity to interact with the Mennonite Community concerning the role of teachers and parents in student education. It is worth noting that a significant amount of research within the PfBAP is conducted as part of thesis or dissertation research that alows for the great productivity of the overall program.

The first few reports herein contained are from La Milpa Group A. Trachman provides the first contribution with her research from the Temple 1 platform (attached to the north side of Temple 1). Grazioso, who also serves as the La Milpa Field Director, reports on research at Temple 3 and related constructions and features. Martinez provides a detailed review of research into the acropolis attached to the west of Group A. These three investigations represent significant efforts at beginning to understand the role, place, function og Group A, at the north end of the site, with the rest of La Milpa and perhaps the surrounding support area.

La Milpa Group B research is directed by Houk as his La Milpa Core Project. Houk provides the background/foundation for the research being conducted at Group B. Trein, Padilla, and Barrera each provide detailed excavation reports on specific Group B research agendas. The findings from Group B are going to dramtically change some perspectives concerning the function of group-to-group interaction and development.

Lewis, Dodge, and Wigmore describe their findings fron a series of small plazuelas located parallel and east of the South Acroplois. Three interconnected plazuelas were investigation with a significant effort at the northernmost plazuela of the group.

La Milpa East is a small settlement east of the site center investigated and reported by Weiss-Krejci. This report provides significant findings concerning the chronological use of the area and represents one of the areas of continued research. Similar to La Milpa East is the settlement area of Medicinal Trail, part of the "support" area for the main center of La Milpa. Hyde served as Field Director for the Medicinal Trail investigations, both directing his own research and assisting with other excavations. The 2007 field season included investigations at Medicinal Trail Group A lead by the report from Hyde and Atwood. Rodriguez provides his intial research findings also within Group A. Cavazos and Wren included two reports concerning special burials. Riddick focussed her research on a testing program at Group B. As with all research programs, the testing phase is critical and often forms the foundation to which subsequent research is anchored. Martin, also reporting from Group B, studied and provides preliminary notes concerning the looter's trench from the shrine of the group. Whitaker provides a very detailed report on mapping and testing of an "isolated" group south-southeast of Medicinal Trail Group A. Whitaker's research, along with the efforts of Riddick and the long-term investigations of Hyde (and others), will ideally lead to a better understanding of how these small groups may have interacted. Ultimately, the PfBAP seeks to understand then the broader connections between the "support settlements" (like Medical Trail and La Milpa East) and the site centers (such as La Milpa).

Hageman's research project continued to detail small sites along the Dos Hombres - la Milpa transect as well as the "agricultural" site of Guijarral. Hageman, Goldstein, Kavoutzis, and Goldstein report on several of their findinds curently centered on possible feasting activities at these smaller communities. The research by Hageman and his colleague at these minor sites remains critical to the reconstruction of ancient Maya civilization.

The PfBAP, as an archaeological research program, is moving in the direction discussed earlier for the regional perspective. Large sites such as La Milpa and continued research at the smallest of settlements (such as Medicinal Trail) represent the wide range of ancient Maya structures. It is the describing, defining, and interpretation of these settlements and their potential interactions that will provide a model of a regional state for the northwest Belize zone.

Outside of archaeology, but important research concerning contemporary issues is a paper provided by Shifrer. Her study of the education system and interactions between teachers-parents-students in a local community presents data of great value and application for many communities (in Belize and North America). Her findings and insights are particularly relevant and fascinating. The PfBAP is please to have provided assistance for the research and greatly appreciate her contribution.

SUMMARY COMMENT

The cultural institutions on which archaeologists focus are artificial constructs used for analysis and do not necessarily reflect an internal or "emic" perspective on ancient culture. Researchers must be often reminded of this position in an effort to remain objective. The following is repeated from Valdez (2007) as these remain a constant for the PfBAP (at least). True emic perspectives are obtained only rarely in archaeology, usually through the use of ancient texts. These, however, tend to have specific and limited referents. Our use of an external or "etic" perspective in the form of institutional analysis is the best window we have on a holistic understanding of culture. Archaeology studies the material remains of culture, which provide an indirect view of human behaviors that underlie cultural institutions. Unfortunately for the archaeologist, Maya hieroglyphic texts and iconographic symbols focus primarily on calendric, ritualistic, and dynastic information and therefore deal only indirectly with the institutions and secondary components that provide a broad view of culture. It thus remains for the archaeologist to clearly demonstrate the logical connection between recovered field data and the cultural institutions of which they formed a part.

OTHER ACTIVITIES OF THE PfBAP

Several of the PfBAParchaeologists have provided public lectures to visiting groups at the La Milpa Research Station. Some of these groups are student-tourists, usually from the USA, learning about the forest environment and have been extended the opportunity to learn about Maya archaeology as well. Lectures were also provided for several student-teacher groups from Orange Walk or Belize City, who do not often have the opportunity to visit the forest or Maya ruins.

A great opportunity to introduce the extended history of Belize into the local Mennonite Community has been part of the PfBAP's extended activities. Several Mennonite families visit the Adam's Research Facility to better understand "what we do," "how we do it," and "why we do this research." Our lab and excavations are continuously open to the community and anyone interested in our research.

The local workmen (most from San Felipe) and cooks (from Guinnee Grass) are also introduced to our activities both in the field and in the laboratory. We encourage anyone interested to visit, ask questions, etc. thus, the PfBAP has been quite active in a number of areas (locally and regionally) to promote the archaeology of Belize, but particularly northwest Belize.

In addition to the archaeological field investigations of the PfBAP is the "education study" mentioned above and reported by Shifrer. Of archaeological interest has been special conservation efforts (field and lab), and student training in conservation techniques ny Norma Garcia of Mexico. The PfBAP has been priviledged to host Garcia and her experise in conservation efforts. Ceramic production studies have been enhanced by Clint Swink and Cory Dangerfield through very technical, hands-on efforts at replicating ancient Maya pottery. Sharon Hankins has also been of great assistance towards undrstanding Maya pottery production, both in an experimental effort and in providing students hands-on opportunities with this type of research.

ACKNOWLEDGEMENTS

Our thanks go to many people and institutions in Belize and at home that allow for our time in the field in a productive and gainful way. In Belize, the Institute of Archaeology and the many professionals working there are always helpful with sound advice and serve as a stabilizing force. Dr. Jaime Awe, Director of the IoA, is always enthusiastic and ready to provide sound advice. Dr. John Morris, Director for Research and Education at the IoA, provides the PfBAP with tremendous guidance in all of our efforts. Dr. Morris, along with Dr. Awe have been especially motivating and encouraging about expanding our roles and research endeavors (such conservation measures, and ceramic production studies, among others).

Brian Woodye and George Thompson, Directors of the Conservation and Management side of the IoA, and the many archaeologists of the IoA including Sherilyne Jones, Joyce Tun, and Melissa Badillo have been particularly helpful through the seasons. Teresa Batty, formerly of the IoA and now with the Museum of Belize (Belize City) has remained a constant source of encouragement. At the front desk of the IoA is Claudia Elena, who has always been of tremendous help to all of us from the PfBAP, and a pleasure to see as we enter the offices at IoA.

The PfBAP also gives great appreciation and acknowledgement to our artifact specialists. Lauren Sullivan directs and oversees all ceramic studies. Palma Buttles helps coordinate “small finds” analyses. Frank and Julie Saul along with Lauri Martin provide their expertise to osteological studies. Rissa Trachman is in charge of obsidian analysis and David Hyde coordinates the chipped-stone lithic studies.

John Masson (of Ladfville), Paul Hunt (of Belize City), and Glenda & Herbert Masson (of Belmopan) remain among the most interested and helpful of Belizean citizens. Dr. Moore of Belmopan also remains a significant advisor and great friend to all of us on the PfBAP.

The many families of the Blue Creek community have shared much of the interest and curiosity. We are especially grateful to Peter Rempel and the Rempel family as well as

the Nuefeldt family. Our camp and field assistants from San Felipe and Orange Walk always provide great company and security. Our cooks, lead by Cruz Rivas, provide the best meals in Belize! Oscar and his family always make certain camp is in order, providing peace of mind for staff and students alike.

At home (at least in Austin), various members of The University of Texas share in our vision and provide support that makes everything else possible. The Dean's Office in the College of Liberal Arts, the Department of Anthropology, and our "account administrator," Diane Ruetz (at TARL), are particularly important in the success of the Belize Program. The completion of this volume was possible only through the dedication and great effort of David Hyde in his assistance to format this report.

Of course, the many colleagues (many contributing to this volume) involved in the PfBAP provide the much needed "sounding board" for all of our research endeavors. The various staff members from the different projects and the corresponding students and volunteers keep us all in line and motivated to continue with this important research. There are many individuals that we should acknowledge, but are unable at this time or in this format (including our graduate students, returning students, and independent researchers).

Among those deserving significant appreciation are the archaeologists and researchers that have lead many of us to this point. In field research, particularly field methods and interpretation is Jack D. Eaton through his research in Yucatan, Belize, and Guatemala. Thomas R. Hester has been instrumental in understanding field strategies, lithic analysis, craft specialization, and general project management. Richard E. W. Adams, Director of the Rio Azul and Ixcanrio Projects in Guatemala, is also the Founding Director of the PfBAP. Now referred to as "Director Emeritus" of the PfBAP, Dr. Adams continues to provide valuable insights for the PfBAP research. The PfBAP is forever thankful for his guidance in field endeavors, artifact analysis, data interpretations, and project/field logistics. The PfBAP has named the camp facility as the "R. E. W. Adams Archaeological Research Facility" in his honor and with the hope that he will be pleased with our research results.

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EXCAVATIONS OF PLAZA A, STRUCTURE 4, AT THE SITE OF LA MILPA, BELIZE: A REPORT OF THE 2007 FIELD SEASON

Rissa M. Trachman, Elon University

INTRODUCTION

The 2007 investigations at the site of La Milpa, Belize consisted of excavations in and around Plazas A and B. The research included some preliminary excavations in Plaza A, Structure 4. This report is concerned specifically with the field work conducted at Structure A-4. Plaza A is the northern-most of the three main plazas at the site of La Milpa and is comprised of four temples, two range structures, two ballcourts, and two smaller structures.

One of these smaller structures is Structure A-4 (Figure 1). It is to the north of Temple 1 and appears to be adjoining it. The angle of alignment of the Structure A-4 seems slightly different than that of Temple 1, however. Preliminary field assessment indicates that the terminal construction of Structure A-4 is positioned at approximately 12˚ from North, while Temple 1 appears to be approximately 6-8˚.

Structure A-4 is also only ca. 30 m to the east of Ballcourt 1. Its position to the ballcourt in this northern portion of the plaza is that it is positioned perpendicular to it and the center lines of the ballcourt alley and Structure A-4 seem to nearly align (Figure 1). This provides Structure A-4 with a distinct vantage of the ballcourt alley and therefore the ballgames that took place there.

Six seasons of previous investigations were conducted by the La Milpa Archaeological Project (LaMAP) and Boston University, led by Norman Hammond and Gair Tourtellot (Tourtellot et al 2003a; see also Hammond and Tourtellot 1993; Hammond et al 1996; Hammond et al 1998; Hammond et al 2000; Tourtellot et al 1993; Tourtellot et al 2003b). It is likely that LaMAP also investigated Structure A-4 and Temple 1 at least minimally. One looters trench was previously backfilled on the front of structure A-4, though much of the looters back dirt remained on the surface of the structure's stairway. Additional evidence observed suggests that previous excavations were conducted near the top of the mound in the northern half of what a possible room block. No other known previous work has taken place on the Structure A-4.

EXCAVATIONS

Preliminary excavations of Structure A-4 consisted of a unit placed in front of the structure and a large exposure on what was anticipated to be the outset stairway of the basal platform. The overall mound ranges 3–4 m in height with the platform making up the bottom half at approximately 2 m.

Figure 1. La Milpa site center (Tourtellot et al 2003).

Five excavation units were placed during the 2007 field season at Structure A-4. One unit was placed approximately 4.5 m to the west or in front of Structure A-4 (Figure 2). It was opened in order to probe the plaza subfloor fill for information regarding both construction/fill episodes and chronological sequence. This unit revealed no preserved *in situ* plaster flooring, though there were multiple filling episodes. A total of three fill layers were clear in the profile (Figure 3). This may be indicative of three possible phases of construction in association with Structure A-4 as well. Excavations in 2007 have begun to reveal at least two phases of construction so far.

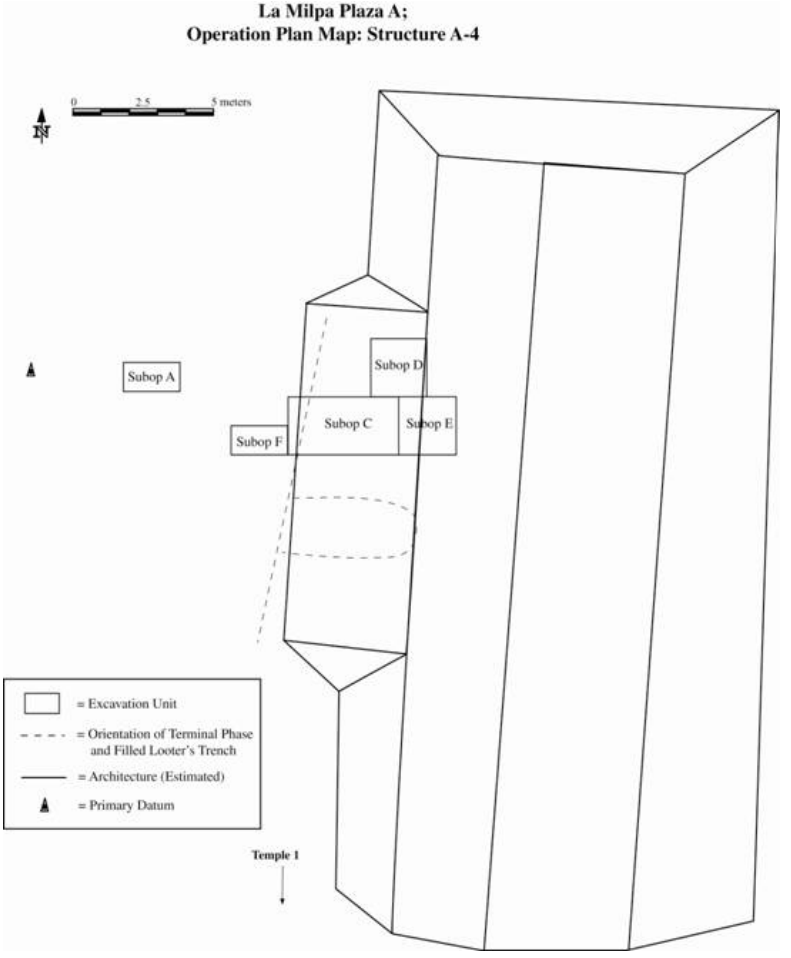

Figure 2. Structure A-4, operation plan map.

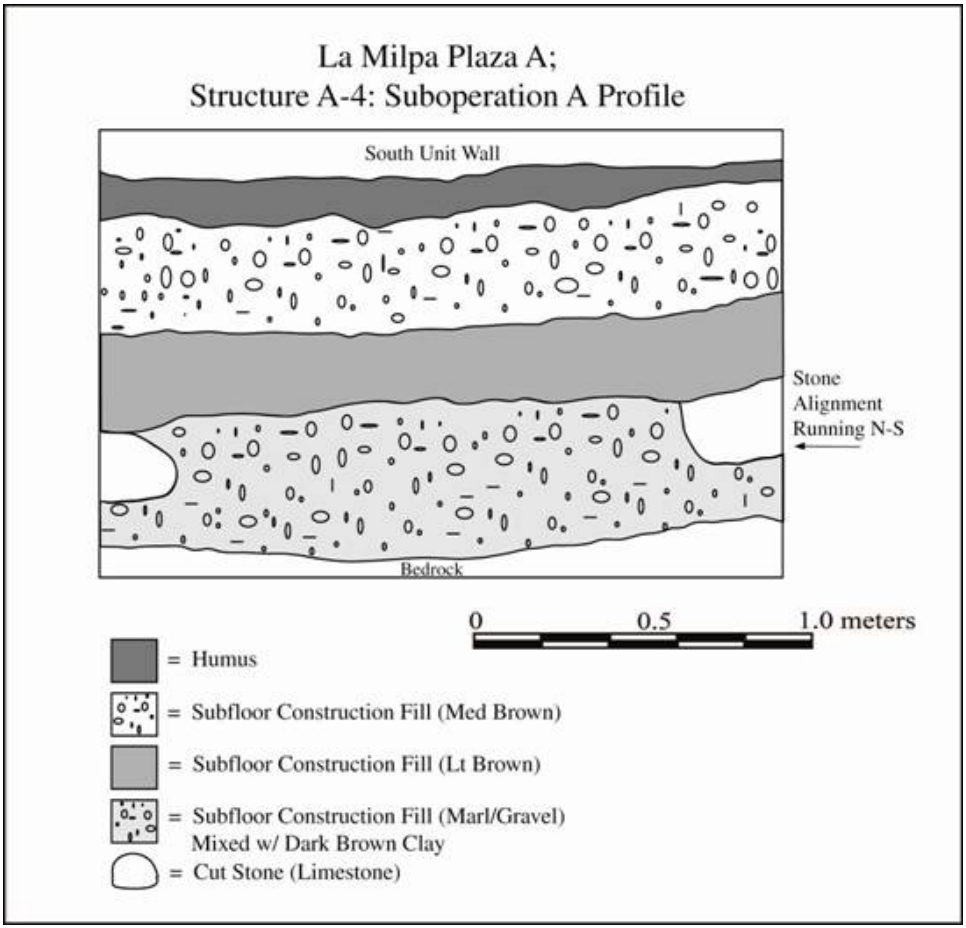

Figure 3. Subop A south unit wall profile.

Structure A-4 Terminal Phase

A block of three excavation units were placed order to expose the front stairs of the platform, Subops C, D, and E (Figure 2). The three excavation units represent the majority of the excavated area in 2007 which totaled 20 m². All excavation units were oriented cardinally. As a result, the terminal phase of architecture was uncovered at an angle to the units, since the last phase of construction was oriented at approximately 12˚. Little of the terminal phase of architecture was found to be intact with only three stone alignments visible. These probably represent three individual steps of the terminal phase stairway. The poor preservation of this phase is common and likely due to the lack of overburden and environmental forces. The looting episode created additional damage to the stairway of Structure A-4 further complicating the already tenuous preservation.

Structure A-4 Sub 1

Once the terminal phase of architecture and collapse was exposed, an additional unit (Subop F) was placed just west of Subop C (Figure 2). Subop F was placed just as the terminal phase collapse was being removed from the western portion of Subop C. As a result, the first substructure was uncovered initially at the juncture of the two subops (Figure 4). The portion of the Structure A-4 Sub 1 that was revealed was a step, likely the first or westernmost step of the substructure. Some very eroded but *in situ* plaster was also found intact in Subop F lying just west of or below this first step (Figure 4). This level of plaster matched the top of the first level of fill below the humus in Subop A.

Figure 4. Westernmost step of Structure A-4 Sub 1.

The western end of Subop F had no preserved plaster at the level that it was present at the eastern end near the step. More matrix was excavated in this west end of the unit in order to see if there was another step or if there were any earlier plaster flooring episodes that might match the stratigraphy of the off mound Subop A. Although the excavation was not completed, no other floors were uncovered west of the structure during the 2007 season. What was discovered, however, was a fragment of a slipped vessel (Figure 5) and a *Nephronaias* bivalve shell. *Nephronaias* is a species of freshwater mussel. This was the only fresh or marine shell found in the 2007 investigations. The two artifacts

were found approximately 27 cm below the level of the plaster in the eastern end of the unit. The two were also within 10 cm of each other both horizontally and vertically. The clear association of them may be indicative of their symbolic placement, meaning that they may represent a cache.

Figure 5. Vessel fragment *in situ*.

An additional substructure alignment was found in Subop C to the east of the first step found at the juncture of Subops C and F. The stone alignment appears to be another step of the front stairway of Structure A-4 Sub 1. It is positioned approximately 70 cm east and is approximately 20 cm in rise. An additional alignment was also documented immediately behind or east of this alignment. The two sets of stone may be

representative of only one step. Since the removal of the terminal collapse debris is still ongoing, it remains to be seen how many steps there are for the substructure, and what is the nature of the architecture. What is interesting about the substructure alignments thus far is that the orientation of the architecture is different that that of the terminal phase. As of the end of the 2007 field season it appeared that Structure A-4 Sub 1 was oriented somewhat more cardinally, at approximately 6˚.

CONCLUSIONS

A total of 5 units were excavated covering 20 m² during the 2007 field season at Structure A-4. Only minimal *in situ* remains were found in the terminal phase of construction were present. Evidence of a first substructure and a possible associated cache were also uncovered. Further investigation will be needed to assess the nature of the buried architecture and possible cache. In addition, further investigation of the upper portion of Structure A-4, a possible room block, is needed and planned for the 2008 field season. Several hypotheses can be posited for the presence of the structure thus far: 1) it is related to the ballcourt, possibly a viewing stand; 2) it is symbolically associated with Temple 1 and/or 3) it is elite residential in nature.

Hammond and Tourtellot (2004) have suggested that Plaza A was undergoing a refurbishment in its terminal phase of occupation. They point to the absence of large structures in northern and northwest portions of Plaza A as an indication that this refurbishment was not completed prior to the abandonment of La Milpa. Future investigations in the northern end of Plaza A will include excavating the apparent conjunction between Temple 1 and Structure A-4 in order to assess the type or presence of the junction, which of the two was built first, and at what phase the other was built comparatively. In addition, it will be important to determine if Structure A-4 was built simultaneously with the ballcourt, or at what time each was constructed. The resulting data correlated with the previously suggested sequence of buildings in the southern portion of Plaza A, that provided by Hammond and Tourtellot (2004), could shed light on the sequence of construction events in Plaza A and that leading up to the end of occupation at La Milpa.

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ARCHAEOLOGICAL INVESTIGATIONS AT LA MILPA STRUCTURES 3 AND 93: THE 2007 FIELD SEASON

Liwy Grazioso Sierra, Programme for Belize Archaeological Project

SUMMARY OF THE 2007 FIELD SEASON

The 2007 season started on May 16, seven workmen were taken to clear the areas that will be explored in different locations on the site. The façades of Structures 3, 4 and 93, and inside the courtyard (labeled as 88 on Tourtellot's map) the façades of Structures 9, 13, 14 and 15 were cleared on Plaza A, as well as Structures 20, 21, 22, 24, and 28 on Plaza B.

Plaza A was worked by the University of Texas at Austin Field School (UT) and Plaza B by Texas Tech University (TT). Field program participants arrived on May 17.

According to the Programme for Belize Archaeological Project, the site of La Milpa is designated RB-25. The methodology used by the PfBAP is the Operation-Suboperation-Lot System, as primarily utilized with the Rio Azul Project and the Ixcanrio regional Project (see Munoz 1997:29-33 for details).

For the first time this system was modified and instead of the normal Op = Number, Subop = Capital Letter, Lot = Number, all the Operations in Plaza A and Plaza B will have a Capital letter and a Number together.

So the Operations at Plaza A are as follow:

- Operation A1, Structures 3 and 93 at the SE of Plaza A, directed by Liwy Grazioso
- Operation A2, Courtyard 88, SW of Plaza A, directed by María Dawson
- Operation A3, Structure 4, NE of Plaza A, directed by Rissa Trachman

Operations in Plaza B will have a B before their sequential number. The work at Plaza B was directed by Brett Houk from Texas Tech University.

La Milpa was worked previously by Norman Hammond of Boston University (BU). Hammond made a series of test pits at the base of the monuments (stelae and altars) and in other places looking for caches, but we didn't have a plan map with their locations.

He also documented some of the looter's trenches. We know from Estella Weiss Krejci (Personal communication, 2007) that she documented the looter's trench in Structure 7 herself. The reports, drawings and plan maps may be located at the Institute of Archaeology in Belmopan.

We noticed that the plan map completed by Gair Tourtellot and inked by H. A. Shelley just showed two stelae in front of Structure 93 (Stelae 11 and 12) and two more stelae in front of the NW corner of structure 3 (Stelae 9 and 10), but it seems that in front of Structure 93 there are six big stones that may be considered monuments. Stelae 11 and 12 are clearly stelae, but there is also an altar imbedded in a tree, more or less at the center of the façade, and the three other stones may have been also stelae or stelae fragments. There are two pieces that look that may fit together. They are located at the northern end of the west side of Str.93. I think it may be good to assign monument's numbers to them (at least temporarily), although they have no reliefs, the shape and size indicate they might have been monuments.

I had the chance to ask Norman Hammond why these stones were not marked on the map as stelae (monuments) and he said that "because he didn't considered them as stelae" (Hammond, personal communication, July 2007). Although he didn't consider them as monuments, he dug a test pit around one big stone fragment located at the southern end of the west side of Structure 93. This fragment is almost at the SW corner of the structure and looks like the lower portion of a stela, which was in place.

In the site of La Milpa, 17 Stelae are known and recorded with numbers (Grube 1994), but in the area of La Milpa three more have been reported, making a total of 20 (Hammond 2001). From 1 to 12 were numbered by Eric Thompson (1938), Guderjean added two more in 1988 and 1990. The La Milpa Project (BU) added another two (15 and 16) and in 1993 number 17 was added respecting Thompson's numeration (Grube 1994:217). Stela 19 is at La Milpa East.

We strongly suggest evaluating and analyzing the big stones in front of Structures 3 and 93 to decide if they are indeed monuments and assign them a correlative number. The only acknowledged stelae in front of Structure 3 and 93 are Stelae 9, 10, 11, and 12. But as we mentioned before, there are other large stones which are strong candidates to be considered stelae as well. There is also a circular stone which undoubtedly is an altar. This altar seems to be the only monument that hasn't been excavated, maybe because of its location, it is imbedded in the roots of a big tree. It will be good if we reconsider reviewing all the monuments around the sites to make sure they are recorded and numbered properly.

In 1994 Grube said that a complete publication of the entire corpus of La Milpa's monuments was in preparation to become a volume of the Corpus of Maya Hieroglyphic Inscriptions (Grube 1994:217), but is not yet published. Just few monuments have inscriptions that allow dating. Most of them have been dated by "association" with others, based on size, proportions, shape, stylistic criteria etc. (Grube 1994:218, Hammond and Bobo 1994).

The ones relevant to this report are Stelae 9, 10, 11, and 12, but Grube makes no specific mention to Stelae 9, 10, and 11. He only writes a little bit about Stela 12 and dates it to the end of the Early Classic – beginning of the Late Classic and considers that it has been sculpted in the Late Classic tradition. Stela 12 has three carved sides with an emblem glyph possibly carved on one side (Grube 1994:220-221).

In relation to the orientation, according to Gair Tourtellot's map most of the structures especially Str.1, 2, and 3 seem to be oriented to the Magnetic North, except from the "elevated patio" (88) Operation A2, where Maria Dawson worked. All of the units excavated at Plaza A (Operations A1, A2, and A3) are oriented according to the Magnetic North.

EXCAVATIONS

Structure 3 is the largest in the site. It has a smaller structure attached to its façade (west side of the building), Structure 93. The 2007 season focused in exploring this smaller structure. Our Operation Number is Op. A1. We were able to uncover the SW corner, which was very closer to the surface and some of the stones of the perimeter wall were visible on the surface. The structure's contour is slightly different from the way it's shown in Tourtellot's plan map. It may be worth doing a new plan map of the structure. Inside the looter's trench located at the back of Str. 3 (east side), there are some visible walls, in good shape, whose orientation is about 12˚. Other walls are not straight their orientation are between 10˚ to 15˚ depending on the direction they are collapsing.

Suboperations

A total of 13 suboperations (A to M) were conducted in Structure 93. They were all located according to the Magnetic North. We present a summary of the subops and lot, if more details are needed, please check the lot forms.

Subop A

Placed at the base of Str.93 in front of its SW corner, Subop A was a 2 x 1 m unit. Just to the east is a previous pit, 2 x 2 m, excavated by Hammond. The west wall profile of this unit matches Hammond's unit. In Hammond's unit was visible a cut stone that belongs to the first step of the building.

- Lot 1: Humus layer
- Lot 2: Collapse and debris
- Lot 3: Stone alignment N-S. This stone lining up is the perimeter of the structure. The first step of Str. 93's staircase. At least to cut stones were visible on the surface.
- Lot 4: Construction fill, landing behind the stone alignment (A3) to the east.
- Lot 5: Deposition material, and construction fill.
- Lot 6: Stone cluster

Subop B
Placed at the SW corner and base of Str. 93 is Subop B, a 3 x 3 m unit. The unit starts in the flat area, but goes up on its slope.

- Lot 1: Humus layer
- Lot 2: Collapsed material/construction fill. We removed the layer on top of the stone alignments, we didn't remove any of the stones because they belong to the staircase. They were not very well in place and were off alignment, but one can tell that they are the steps of the staircase, so they were left in place. They will become the next lot when excavation of the structure continues.

Subop C
In the flat area between structures 8 and 93, more or less at the center, was placed a 1 x 1 m unit labeled Subop C. The SW corner of Subop C is 6 m. to the north and 17 m to the west from the SW corner of Subop A. We collected three lots with ceramic and lithics. The stratigraphy is Lot 1, humus layer above a stratum that seems a construction fill (Lot 2) placed directly on top of bedrock. No floor or surfaces were found. This unit was controlled by Maia Dedrick.

- Lot 1: Humus layer
- Lot 2: Construction fill. Although this looks like construction fill we didn't find any floor or surface on top of this construction material, but it is clear the Maya added material to level the bedrock and create a leveled surface.
- Lot 3: Dark soil on top of the bedrock

Subop D
Clearing of the looter's trench located at the northern end of the west side of Str.93. The looter's trench runs from west to east.

Sergio Murillo and David Peña removed only dirt and the accumulated leaves over the stones. No stones were removed only dirt to make the profile clear enough to define the architectural features and to make possible to get a good drawing of the south profile. Anabella Coronado from UT made an excellent drawing of this looter's trench.

In Toutellot's map looter's trenches have no associated numbers so we will assign one to each of them. The assignment is up to the project director (Valdez) who will decide if they will be labeled by numbers or letters. We only cleaned and drew one looter's trench, in the northern edge of the west façade of Structure 93. It is the looter's trench at the extreme north in the west façade of Str.93.

Subop D has only Lot 1 which consists of the material gathered from the cleaning of the looter's trench. Thus far, only looter's dump and looter's trench collapsed materials. Some interesting sherds were collected, and there was a wide variety of ceramics.

The dirt removed was not screened and placed aside along the north profile, we only drew the south profile which is the better preserved and showed more architectural features. At least two substructures are clearly visible in the extreme east (up) and a series of floors. Both substructures belong to different time periods. To the west of the trench (down) there is also another substructure, but it wasn't possible to join them together or to make a link between them. There is a gap in the looter's trench that doesn't allow to connect them or to infer what happened between these substructures. The two visible on the east edge and the one in the west edge are two completely independent construction episodes. So at least three substructures are clearly visible in the looter's trench. Maybe there is a fourth one, if we consider the rectangular blocks visible at the bottom of the trench in the extreme west that looks to be part of a perimeter wall of the structure (Subop M).

The width of the trench varies between 1.10 m and 1.50 m, at the very top there is a section almost 2 m wide. Measured in a straight line it is about 14 m. long from the base of the mound, but if you measure it from where the dump starts (close to the perimeter of the structure) it is more than 18 m long.

Subop E
East from Subop C, between structures 8 and 93 is Subop E, a 2 x 1 m unit.

- Lot 1: From the humus to the bedrock. Bedrock was very shallow.

This unit was controlled by Maia Dedrick and the stratigraphy is exactly the same as Subop C, here the bedrock was very shallow, so there was no need to divide the humus from the rest, as there were just few stones between the humus and the bedrock.

Subop F
The NE corner of Subop F is 1 m south from the SW corner of Subop A. This unit measured 2 x 1 m. Subop F is also west from where we found the stone alignment (first step) in Subop A.

- Lot 1: The entire unit from humus to bedrock. Bedrock was very shallow.

This subop is just 0.40 m. to the south of Hammond's previous unit, around the base of a big stone (which may have been a stela).

Subop G
Subop G was the cleaning of the looter's dump, north from Stela 12. The dump was very close to the monument. Apparently the looters dug the base of the stela looking for caches. The stela lies on its back. It is unfortunate that the monument was never covered with some kind of perishable roof, because there are some inscriptions still clearly visible in the stela, as well as remains of the carving in the front of the monument that represents a possible ruler.

- Lot 1: Looter's dump (looter's backdirt). A wide variety of sherds were collected.

Subop H
A southward extension of Subop B is Subop H, a 5 x 3 m excavation. It is at the base of Str.93 on the SW corner.

- Lot 1: Humus layer
- Lot 2: Collapsed stones and construction fill
- Lot 3: Wall E-W
- Lot 4: Construction fill
- Lot 5: Possible floor, or a cap of some sort. Closed although it wasn't finished, due to the end of the season.

In Subop H we made an unusual finding, in A1-H1 we found a lanceolate (lance-shaped) metal piece, very eroded, that we don't know what it was used for, it has a small circular perforation close to its distal end. The tip seems broken. It may be a very old artifact of some sort or from Thompson's time. It flakes in a laminar way. It was on the surface and in the same stratum we also found a knife blade that seems to be made from stainless steel (a more recent piece than the other), which make us think it might have been used by the looters.

Subop I
Between Subops A and B is Subop I (2 x 1 m), east from Subop A and west from Subop B.

- Lot 1: Humus layer. After this lot, Subop A absorbed Subop I to become a 2 x 2 m unit. Originally Subop A was a 2 x 1 m N-S, and Subop I was a 2 x 1 m N-S, one next to the other, and they became one unit with Lot 2 (A2).

Subop J
In front of Str.93 (at the center of the west side), between the two looter's trenches was placed a 4 x 2 m unit, Subop J. The SW corner of Subop J is 7 m north from the NW corner of Subop I.

This unit became very interesting and had several features that were hard to make an interpretation because most of them were partially destroyed or dismantled during Pre-Hispanic times and also due to looting. We recovered partial features of different kinds. Some of them were possibly related to features in other units, but others remain unknown in function or relation to other architectural features. Debora Trein was in charge of controlling and documenting this unit. More details may be found in her field notebook.

- Lot 1: Humus layer
- Lot 2: Looter's backdirt
- Lot 3: Collapsed stones and debris
- Lot 4: Construction fill

- Lot 5: Construction fill
- Lot 6: Floor
- Lot 7: Stone alignments E-W
- Lot 8: Cut in the bedrock, filled in with large stones about 60 x 20 cm to 80 x 20 cm in a light brown matrix, soft light brown dirt, dry, and very easy to remove.

Subop K

North from Subop J, like an extension to the north, Subop K is a 3 x 1 m excavation.

- Lot 1: Humus layer to the bedrock

Subop L

Subop L is 2.10 x 0.40 m (N-S). It is located 2 m North from the SW corner of Subop H. Subop L follows the wall that runs E-W found in Subop H. The unit goes from the edge of the west profile to the alignment visible at the surface, i.e., the same feature found in subop A. The unit is very shallow and close to the surface. It was excavated to locate the SW corner of Str.93.

- Lot 1: Humus layer
- Lot 2: Wall (SW corner of Str.93)

Subop M

North of Subop K, between Subop K and the looter's trench, Subop M measures 3.2 x 1.5 m. This subop follows the wall visible in the looter's trench profile.

- Lot 1: Extends the whole length of the unit. The subop was wide at the beginning for safety purposes, the surface was covered with looter's dump so it was necessary to clear a wide area to avoid stones and dirt from falling down. All we wanted was to follow the wall, but along the surface we needed to open space to facilitate research. This lot is comprised only of looter's dump.
- Lot 2: Is only 3.20 x 0.40 m, but follows the wall that runs N-S. The lot is only humus material as well.
- Lot 3: Wall (the wall runs N-S) and is the perimeter wall of Str.93 (the western wall, at the base of the structure). Made with large rectangular blocks, we followed the wall from the unit all the way to the looter's trench south profile.

COMMENTS AND REMARKS

During the first season we basically scratched the surface of the structure. We concentrated our efforts on Structure 93, the smaller building attached to the façade of Structure 3. We were very careful because there were three looter's trenches, several looter's holes, and disturbances by roots and holes. We were able to define the southwest corner of the structure and follow it to the north and east. The follow up to the north proved to be the firts step of the staircase, in its east direction it becomes part of a narrow wall.

It was not possible to follow it because of the looter's holes and disturbances in the soil in the middle of the façade. The stone alignments do not continue along the center of the façade. In the second part of the season we tried to match some of the architectural features visible in the looter's trench (No.1, located at the north end of the west façade of Structure 93). These features were very well documented by Anabella Coronado. At the bottom of the looter's trench (west end) what seemed to be the perimeter wall of the building was clearly visible, we tried to follow it to the south and see if it matched with what we had in the subops in the south part (Subops A, I, and L) of the structure, but the big faced stones, visible at the bottom of the looter's trench, did not match the wall that forms the first step and the SW corner of the building. This big rectangular blocks are well into the structure, so they must belong to a substructure, better preserved than the construction episode exposed in subops A, B, H, and I.

There is also a clear difference in the type of masonry. The last construction episode was made with smaller rectangular blocks and the limestone is not as hard as the one used in the substructure. The blocks of the substructure are in average double the size of the ones in the latest construction, and in some cases they are three times bigger (more than 50 cm x 30 cm x 25 cm).

In subop H, we found a very well preserved wall that runs E-W, made with well cut stones, it is about one meter high, the top part is flat and we can see parts of the steps of a later construction episode on top, the flat part continues underneath these stones. We will need to remove these stones in order to follow this wall that must belong to a substructure. The excavation was terminated at this level to avoid taking away the stones of the later construction face. At the bottom of the wall there is a stucco surface but the wall continues underneath it. We also stopped here for next season because in the west profile of subop H we found a natural cavity in the bedrock. We do not know how far it extends or how deep it goes. It was visible because the stucco surface is gone in that part. Apparently the stucco originally reached the level where the cavity begins. The shape of the cavity is very irregular (it looks natural), but because it runs very straight in a North-South direction may be that it was cut intentionally. The cavity is just visible in certain parts, and the holes of the cavities look natural, but the top part of the bedrock seems cut. The bedrock stops at that level, very high, and very shallow from the surface.

Because the bedrock was rising from West to East, as seen in subops C, E, F, and L, we assumed that it will continue the same pattern and that it raise towards the structure and had been used as the foundation for Structures 3 and 93, but the discovery of this cut in the bedrock indicates it is not the foundation of the building. It is higher than the wall found in Subop H. The bedrock may have been the foundation for the latest construction, because the SW corner of the building, the stone alignment that forms it runs on top of the bedrock (Subop L) the same happens with the first step found in Subop A.

It is important to know that cavities in the bedrock also appeared in the east profile of Subop I that runs in the same direction (line) that the west profile of Subop H. So it seems that these cavities extend in the SW part of Structure 93. We terminated Subop I at this level to be consistent with what we did in Subop H. We will wait for next season to explore these cavities and to penetrate the stucco floor shown in Subop H.

To the North, more or less in the same line, in Subop J we found the bedrock intentionally cut. In Subop J there are no cavities and the bedrock looks like it has been leveled and the surface is smooth. The cut is very fine, it drops vertically to the east. It makes like a step, but it is in the opposite direction of the structure. The cut is lower in the east and higher in the west. This cut extends to the east underneath stone alignments poorly preserved, but that look they were part of steps. We ended the excavation here. The alignments found in Subop J do not match those found in Subops A and I, but it seems that at least one of the alignments located in the south profile of Subop J may be part of one of the stone alignments found in the north profile of Subop B. We'll need to excavate to make certain that the alignment is the same, in which case they will be part of a substructure and not part of the last construction.

The last construction is visible in Subops A, F, I, and L, and in some parts of Subops B and H, however, in Subops B and H, the stones were very shallow to the surface so we removed them.
The substructure (or possible substructures, it may be more than one) are visible in Subops B, H, J, K, and M.

We backfilled completely Subops C, E, F, L, and M. Partially backfilled Subops A, I, J, K, and part of B; and we left a roof made of poles and tarps on top of Subop H and part of B, expecting to continue next season. The roof was covered with dirt, so it will not be visible and will look like the mound. This was important to do because Structures 3 and 93 are in the main plaza and are part of the tourist trail for visitors to the La Milpa site.

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EXCAVATIONS AT LA MILPA, BELIZE, LOS PISOS COURTYARD, OPERATION A2: REPORT OF THE 2007 SEASON

Maria Martinez, The University of Texas at Austin

La Milpa, located in Northwestern Belize, is the third largest Maya site in Belize. La Milpa was a medium size urban center and lies within the Rio Bravo Conservation and Management Area (Figure 1). Established in 1988, this nature reserve consists of over 250,000 acres and borders with Mexico to the north and Guatemala to the west. E. J. Thompson originally documented La Milpa in 1938; however, it was not until 1992 that major archeological excavations and mapping were conducted (Adams et al. 2004) Under the auspice of Boston University, Norman Hammond and Gair Tourtellot III directed the La Milpa Archaeological Project (LaMAP) and conducted excavations at La Milpa, every other year, from 1992 to 2002.

While LaMAP produced a significant amount of information about La Milpa, much of the work conducted was dedicated to mapping and selected excavations throughout the site, however, a great deal of the site's prehistory remains unknown. The Programme for Belize Archeological Project (PfBAP) is committed to expand on LaMAP's work and shed more light on the development and occupation of this important Maya Lowland city. The PfBAP began initial research at La Milpa during the 2007 summer field season. The plaza group designated Courtyard 88 by Tourtellot and Shelley (Hammond et al. 2000), has been designated "Los Pisos Courtyard" (Operation A2), by the PfBAP, and will be described and discussed below.

SITE DESCRIPTION

The ceramic analysis indicates that the site of La Milpa was occupied as early as the Middle Preclassic and as late as the early Postclassic periods (800 B.C. to A.D. 1000) (Kosakowsky and Sagebiel 1999; Sagebiel 2005). Although the site was relatively small for most of its existence, there was a major population explosion during the Late-Termimal Classic (A.D. 700-900) Periods (Hammond et al. 1998; Tourtellot III et al. 1994). Hammond asserts that the population during the Late/Terminal Classic periods may have been as high as 50,000 (Hammond et al. 1996: 86).

La Milpa's edifices comprise two main groups, and include vaulted range structures, temples and ball courts. In similar fashion to Dos Hombres and other lowland Maya sites, La Milpa is laid out on a north-south axis (Ashmore 1991; Houk 1996; see Figure 2). The northern group consists of the Great Plaza, one of the largest public spaces built by the Maya (Hammond et al. 1996). Within the northern group are four of the largest pyramidal structures, two ballcourts, and 16 of the 19 known stelae. The southern group is connected to the northern group via a causeway (sacbe), and consists of two plazas, B

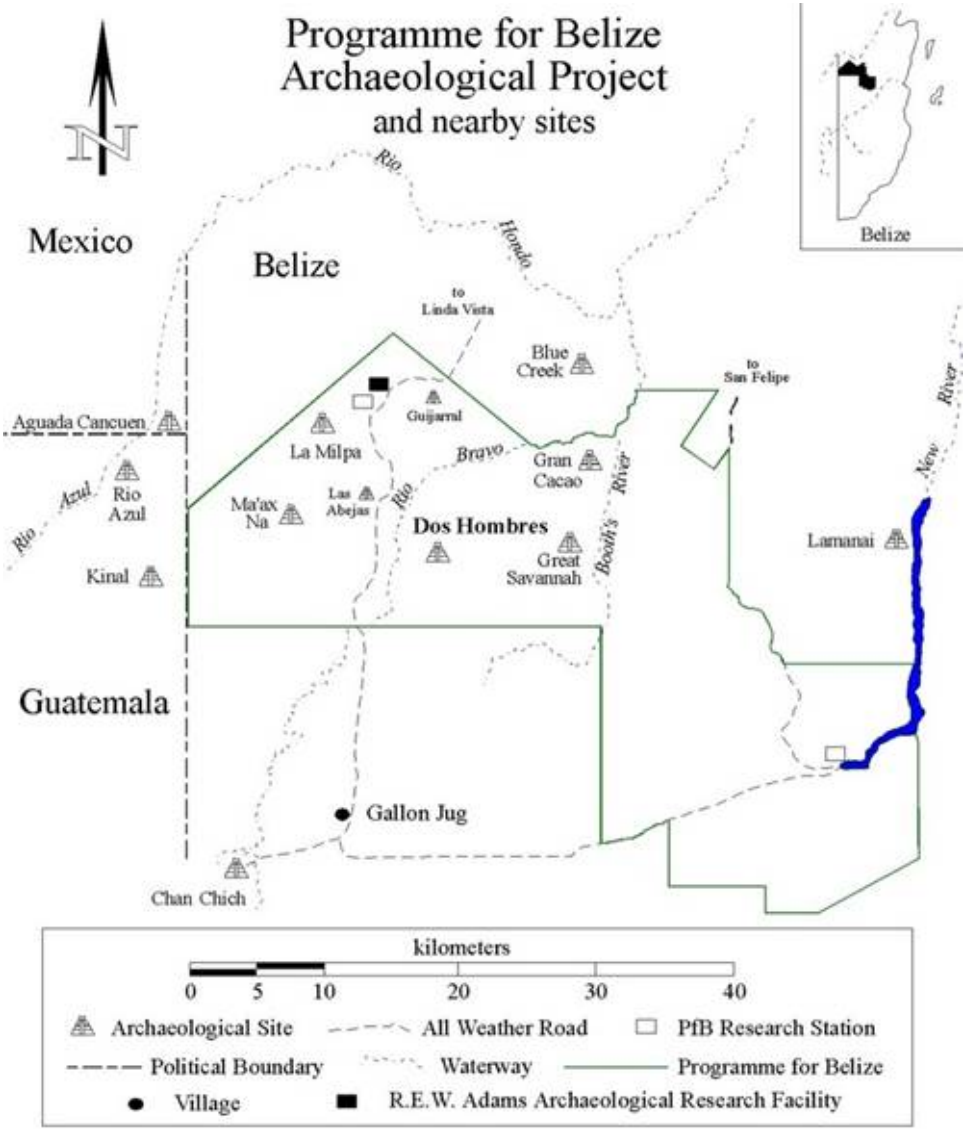

Figure 1. Map of Rio Bravo Conservation and Management Area (Courtesy of the PfBAP).

Figure 2. La Milpa, site core (after G. Tourtellot and H. A. Shelley).

and C. Most of the construction of the southern group is considered a later addition to the site core, dating to the Late-Termial Classic Periods (Hammond et al. 1998).

Based on a preliminary ceramic chronology, Los Pisos Courtyard had an extensive and continuous occupation, which dates from the Late Preclassic to Late-Terminal Classic (300 B.C. to A.D. 900) Periods (Lauren Sullivan, personal communication 2007). The Courtyard is located in the northern group and is situated on the highest point of the site, on a platform, four meters above the Great Plaza. This four meter high platform appears to be an artificial construction. The central access route into the courtyard may have been through the large range structure on the eastern side of the courtyard group. To the west of the courtyard is a commanding view of a principal water reservoir, known as the Far West Bajo, and the residences below. To the east, the courtyard overlooks the Great Plaza and the most prominent ritual structures found at the site, two ball courts and Temples 1, 2, 3, and 10.

Los Pisos Courtyard consists of a series of once vaulted structures 9, 13, 14, and 15 (Figure 3). All four structures in this courtyard are oriented approximately 10 degrees east of north. The interior plaza space is 29 m long (north to south) and 10 m wide (east to west). Structure 9, a range structure, dominates the eastern side of the courtyard, and measures approximately 30 m in width (east to west), and 85 m in length (north to south). Its height when viewed from the western façade is 10 m and when viewed from the eastern façade is approximately 15 m. Structure 15, the second largest, is located on the west end and is 8 m wide (east to west), 30 m in length (north to south), and 9 m high. Structure 13, located on of the south side, is approximately 15 m wide (north to south), 25 m long (east to west), and six meters in height. Structure 14, the smallest structure within the courtyard is located on the north end and is 16 m long, and approximately 5.5 m in height. A wall that extends 16 m to the north and 10 m to the east encloses the northwest side of the courtyard. Adjacent to the courtyard, on the northwest side, are two large terraces that lead down to a drainage system. The size of the terraces and scattered mounds suggests that they were not used for agricultural purposes.

Access and visibility into the interior plaza area are very restricted; and would have been during the Late-Terminal Classic times. It appears that a low bearing wall connected Structures 13 and 9, forming a barrier on the southeast side of the courtyard. Passageways, less than one-meter wide, between Structures 14 and 9 and Structures 14 and 15, suggest a similar pattern of enclosure and access restriction on the northeast and northwest sides of the courtyard. Access from the western side seems nearly impossible due to a steep gradient that leads to a drainage system. The wall enclosing the northwest side also suggests that significant effort was made to promote a sort of social distance from the rest of the population. It appears that during the Late-Terminal Classic periods, the central access point into the courtyard must have been from the Great Plaza, through the eastern façade of Structure 9.

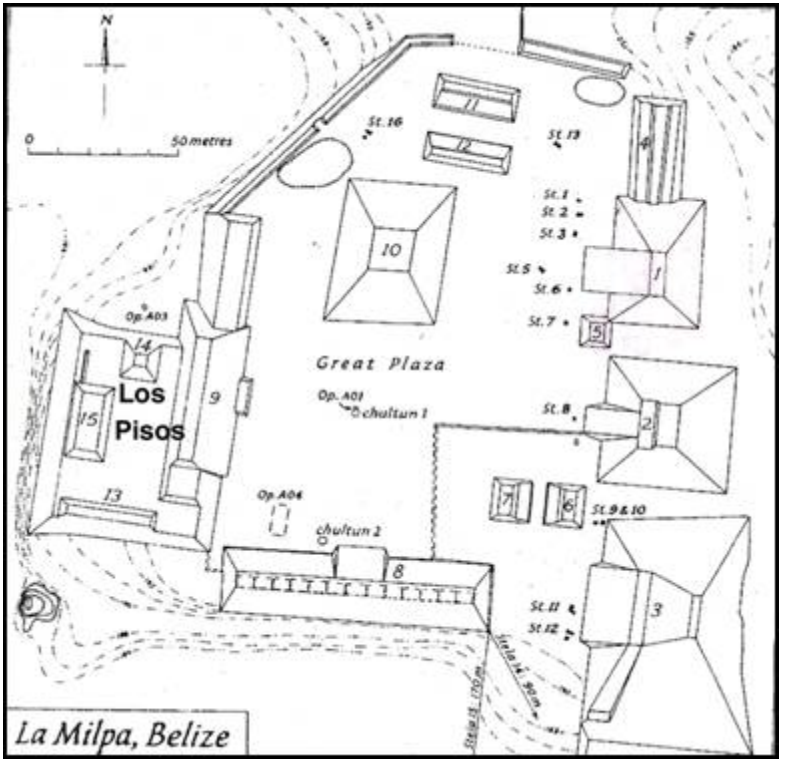

Figure 3. Los Pisos Courtyard (after H. A. Shelley).

EXCAVATIONS

A total of six weeks of excavations were undertaken during the 2007 season. These excavations were carried out to determine the use, function, and temporal dimensions of the Los Pisos Courtyard, and to determine the association of the courtyard to the Great Plaza. More specifically, did the structures in this courtyard serve as residential or other special functions (i.e. ritual or administrative), and how does the use and function of this courtyard relate to the social and political environment of La Milpa during the Late/Terminal Classic periods?

Descriptions of Excavations:

Interior Plaza

Two Suboperations, A and B, were placed at the southern end of the plaza approximately 2 m from the northern façade of Structure 13. The suboperations were used to establish the chronology of the courtyard, the various construction phases of the raised platform, and the development of the plaza area. Based on a preliminary ceramic analysis, the occupation of this area extends from the Late Preclassic to Late-Terminal Classic periods.

Suboperation A consisted of a 2 x 1 unit (north-south x east-west) that was .5 m in depth with a total of 14 lots. High concentrations of lithic and ceramic artifacts were present in the first two lots, however, as excavations continued the quantity of artifacts began to substantially decrease. A succession of plaster floors, approximately ten, and evidence of floor refurbishment were discovered in this suboperation (Figure 4). The latest plaster floors were 5-7 cm thick and not well preserved. These plaster floors are in close succession to one another with thin layers of a soil, sascab, and small pebble mixture of construction fill in between. The earlier floors are well preserved and much thicker; the thickest is approximately 15 cm thick in some areas. A thick layer of dry cobble construction fill, measuring approximately 40 cm, separated the earliest floor from the later ones.

Figure 4. East Profile of Plaster Floors in Suboperation A.

A low masonry structure/platform with an associated posthole was located in the last level of this suboperation (Lot 14). The structure/platform is located in the north end of the unit while the posthole is on the southern end (Figures 5 and 6). Due to time constraints this suboperation could not be expanded and the full dimensions and function

Figure 5. Feature in Suboperation A.

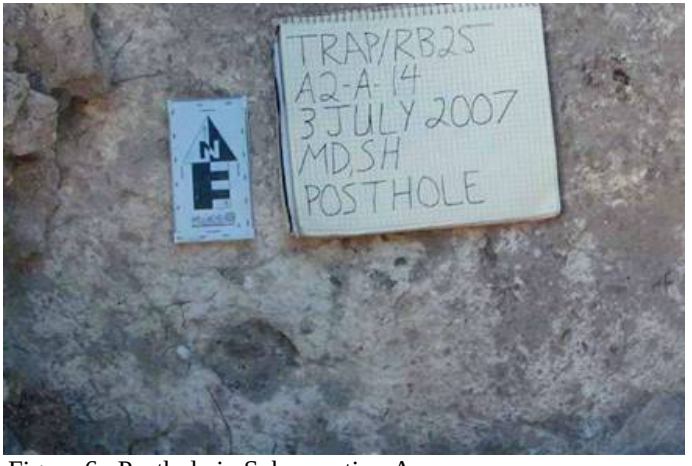

Figure 6. Posthole in Suboperation A.

of the feature are not understood. However, it is very likely that this feature may have been a low support wall for a perishable structure; hence the posthole located 80 cm south of the feature. A preliminary ceramic analysis of eight of the 14 levels suggests an Early to Late/Terminal Classic occupation, however the remaining lots still need to be analyzed. Ceramic and lithic artifacts consisting mostly of chert debitage were recovered. Obsidian bladelets were recovered from the first two lots.

Suboperation B consisted of a 2 x 2 m unit that was 3.4 m deep and a total of 18 lots. This unit also had numerous plaster floors of various thicknesses and preservation (Figure 7). Several significant finds were discovered in Lot 14. Two large cut stones located in the north west corner of the unit, approximately at the same depth of the structure in Suboperation A, may be associated with or be an extension of the feature. Additionally, an area in the southeast corner, approximately 20 x 15 cm in circumference, consisted of ash and small pieces of charcoal, also at the same level as the feature in Suboperation A. Charcoal samples were collected for radiocarbon dating. This suggests burning activities associated with this structure occurred during the Late Preclassic period in the interior plaza area. The most significant find was an opening to a small chultun/cavern, located on the northern profile, approximately 2 m below the ground surface. We could not conduct further investigations of the cavern/chultun due to time constraints, however approximate measurements and photographs were documented.

Subsequently, Lots 17, and 18 consisted of a very thick layer of decomposed limestone (sascab). The sascab is approximately 1.6 m thick and contained a few large pieces of limestone rocks and thin lenses of soil. At this time, it is not known if this sascab layer is a natural formation that decomposed in place or whether it was harvested from elsewhere and brought in to level and elevate the platform. Therefore, it remains unclear if bedrock has been encountered. The preliminary ceramic analyses from this unit suggest a Late Preclassic to Late/Terminal Classic occupation (Lauren Sullivan, personal communication 2007), however, only nine of the 18 lots were analyzed. Lithic artifacts consisted mostly of chert debitage, with a few obsidian bladelets recovered from the first two lots.

Structure 13

Located on the southern end of the courtyard, this structure is the third largest of the four structures. This structure was selected for excavation to test for the chronological sequence of construction phases and to define its dimensions and function. Based on the ceramic analysis, the last construction phase of this structure dates to the Late/Terminal Classic periods. Areal clearing was conducted on the northern façade of the structure prior to excavations, to afford a better view of the structure's alignments and dimensions

Suboperation C consisted of a 3 x 2 m axial unit at the base on the northern façade of the structure. A poorly preserved plaster floor abutting the first stair of the structure, was encountered in the southern end of the unit, while a rock alignment, possibly a landing

that extended into the plaza area, was discovered in the northern end of the unit. The landing extended the entire length of the suboperation (2 m west-east) and is 60 cm wide (north-south). The suboperation was not extended, therefore the full extent of the landing is not yet known. A stone bead and a Postclassic projectile point were recovered in this suboperation (Figures 8 and 9), as well as ceramic and lithic debitage.

Figure 7. Plaster Floor Suboperation B, Lot 12.

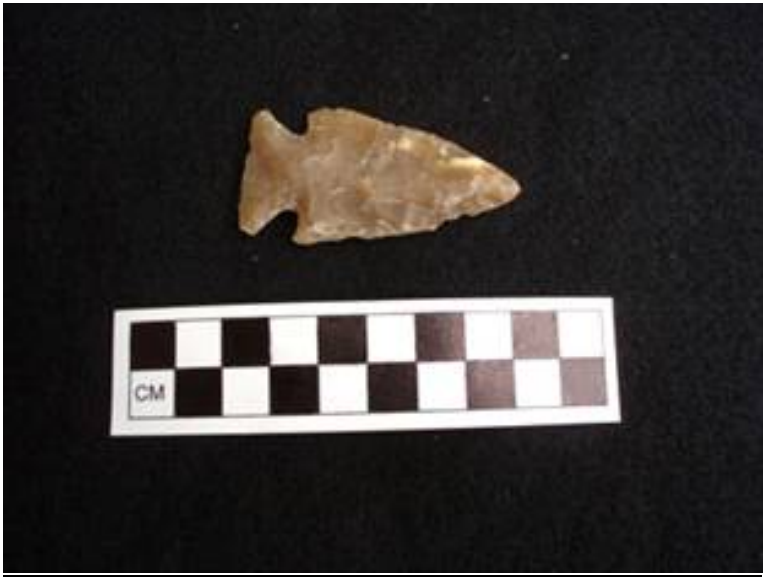

Figure 8. Postclassic chert projectile point from Suboperation C.

Figure 9. Bead, Suboperation C.

Suboperation D consisted of the 2 x 1 m (north-south x east-west) unit abutting the south end of Suboperation C. The basal step of Structure 13 was exposed in this suboperation (Figure 10). Ceramic artifacts for this suboperation have yet to be analyzed. Lithic artifacts consisting of chert debitage and obsidian bladelets where collected.

Figure 10. Structure 13 step at base of structure.

Suboperation E consisted of a 3 x 2 m unit (north-south x east-west) and abuts the southern end of Suboperation D. This unit further exposed the axial staircase of Structure 15. A total of four steps were located in this suboperation. Only one of the four steps was well preserved, and consisted of two courses of large stones. Remnants of a plastered surface at its base, suggests that it may belong to an earlier construction phase, hence the better preservation. Artifacts in this suboperation were very sparse, consisting of a ceramics and lithic debitage.

Suboperation F consisted of a 2 x 2 m unit and was placed on the southern end of the Suboperation E to expose the upper most section of the staircase. Evidence of steps was lacking in this suboperation. The staircase either terminated three quarters up the structure or did not preserve. A plaster feature, a possible posthole was located on the western side of Suboperation F (Figure 11). Two additional raised plaster clumps were located, but were too decomposed to say with certainty that they were postholes. Perhaps the posthole(s) supported some sort of awning for the structure. A large faced stone (64 cm long, 17 cm thick, and 33 cm wide) on the southwest corner of Suboperation F may

have served as a capstone from a corbel arch. Small quantities of lithic and ceramic artifacts where collected from this suboperation.

Structure 15

Located on the western end of the courtyard, this structure is the second largest of the four structures. This structure was selected for excavation to test for the chronological sequence of construction and to define its dimensions and function. Based on the ceramic analysis, the last construction phase of this structure dates to the Late/Terminal Classic periods. Areal clearing of the eastern façade of this structure exposed two convex surfaces on either end of the structure. It was proposed that these convex areas may represent monumental art; accordingly the southern end was explored.

Figure 11. Possible plaster lined posthole.

Suboperation G consisted of 2 x 3 m (north-south and east-west) was placed on the eastern façade on the southern end of Structure 15. As previously stated, Suboperation G explored one of the two convex areas on the eastern façade of Structure 15. Excavations in this suboperation revealed that the convex feature was either looter's back dirt or damage from at least two tree-falls. A small remnant of a well-preserved plaster floor at the base of Structure 15 was located in the southern side of the suboperation. Faced stones were present on the surface and below the humus layer; however, the faced stones were not positioned in any particular alignment. Ceramic and lithic artifacts, consisting of obsidian bladelets and chert debitage, were recovered.

Terraces

An informal survey of the terraces located on the northwest side of the courtyard was conducted. The survey revealed that the terraces consisted mostly of natural limestone outcrops with a small portion of artificial construction. Based on their size, and several small mounds scattered throughout the first terrace, it is conjectured that these were not gardening terraces. Excavations were used to establish the amount of artificial buildup, activities that took place on these terraces, and temporal dimensions.

Suboperation H consisted of a 1 x 1 m unit on the upper most terrace. Two lots were excavated prior to running into bedrock at 30 cm. Evidence of plaster floors was lacking in the suboperation, suggesting that it was not a formalized space. However, the two lots yielded ceramic and lithic artifacts. Obsidian bladelets were only recovered from the first level.

Summary

The physical locality of the Los Pisos Courtyard—attached to the ceremonial precinct, as well as, the architectural monumentality, restricted access, and the continuous and expansive occupation, supports the idea that this space held great importance and was an exclusive place reserved for the most politically important elites of the La Milpa community. Although, the function of the Los Pisos Courtyard remains enigmatic at this point of the investigation, preliminary ceramic analysis suggests an extensive occupation that dates from the Late Preclassic to the Late/Terminal Classic periods, 300 B.C. to A.D. 900. The results of the 2007 excavations generated a date for the last construction phase of two of four structures. Additionally, the significant quantities of ceramic and lithic artifacts may reveal the activities that took place in the courtyard prior to its abandonment.

The sheer monumentality of the structures, especially Structure 9, suggests that a significant amount of time and labor (material and resources) was put into the construction of this space. Hammond et al. (1996) proposes that major construction events at La Milpa took place during the Late/Terminal Classic periods (A.D. 700-900). His assertion coincides with the dates, Late/Terminal Classic periods, generated for the last construction phase of Structures 13 and 15. The construction of the four-meter

platform, the multiple constructions and refurbishing of plaster floors, in the plaza area are also indicative of a mass construction effort and upkeep of this space. This pattern of landscape modeling for architecture is exhibited throughout La Milpa on various scales, especially during the Late Classic period (A.D. 600-700) (Tourtellot III et al. 1996).

The high proportions of ceramic and lithic materials found within the first two lots of all suboperations suggest that the courtyard was intensely used during the Late/Terminal Classic periods (A.D. 700-900). This find is consistent with the rest of La Milpa and many Lowland Maya sites during this time. The high concentrations of artifacts may be representative of termination rituals for significantly important structures and monuments prior to the abandonment of the site (Ambrosino 2003). Additionally, extensive monument veneration took place at La Milpa during the Postclassic period (Hammond and Bobo 1994). Perhaps these high proportions of artifacts are associated with the pilgrimages that occurred at La Milpa during the Postclassic period.

There is sufficient evidence to propose that the spatial design of this courtyard changed though time. The finds in Suboperations A and B, the structure, posthole, evidence of burning, and the possible extension of the structure, indicate that earlier in time, perhaps during the Late Preclassic period, the plaza area was occupied by at least one structure. Ultimately, during the Late/Terminal Classic periods, the architecture formed an enclosed courtyard, with a secluded interior plaza space. More work is needed before a definitive interpretation for the use and function of the Los Pisos Courtyard can be determined. The most compelling evidence for function will come from room plans of the structures and the artifacts found within the rooms.

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THE 2007 SEASON OF THE LA MILPA CORE PROJECT: AN INTRODUCTION TO THE TEXAS TECH UNIVERSITY INVESTIGATIONS AT THE PLAZA B AREA

Brett A. Houk, Texas Tech University

INTRODUCTION

From May 15 to June 7, 2007, the La Milpa Core Project (LMCP), under the direction of Dr. Brett A. Houk of Texas Tech University (TTU), conducted preliminary excavations in the Plaza B area of La Milpa, Belize (Figure 1). The investigations were part of a larger, cooperative research program under the overall direction of Dr. Fred Valdez, Jr. of The University of Texas at Austin. This chapter serves as the introduction to and summary for the section of this monograph devoted to the LMCP investigations. The three chapters that follow present more detailed reports from individual suboperation directors. Debora Trein reports on the investigations of two newly recorded monuments, the discovery of Cache B-1, and initial excavations at Structure 21. James Barrera presents the findings from excavations at Structure 22. Finally, Antonio Padilla describes the investigations at Structures 23 and 27.

The LMCP operated independently in the field but shared laboratory resources and staff with the Programme for Belize Archaeological Project. The professional staff included Houk, the LMCP Principal Investigator, and three field archaeologists: Debora Trein, James Barrera, and Antonio Padilla. The laboratory support staff included Lauren Sullivan (ceramicist), Dara Shifrer (laboratory director), and Norma Alicia García Huerta (conservator). The fieldwork was conducted by 13 students on the TTU Field School in Maya Archaeology and two Belizean workmen, Carlos Quetzal and Joel Magaña.

BACKGROUND

Previous Investigations in the Area

In 1990, the Río Bravo Archaeological Project mapped and explored the Plaza B area, but apparently conducted no excavations (Guderjan 1991). Their teams did, however, report finding some Late Preclassic ceramics and more Late Classic ceramics in the looters' backdirt in front of Structure 25 in Courtyard D. The Late Classic ceramics included a large, partially reconstructable vessel, which measured approximately 67 cm in diameter and 57 cm in height (Guderjan 1991:Figure 6). The illustration of the vessel resembles the large Cayo Unslipped jars found at Dos Hombres and Bolsa Verde (e.g., Sullivan and Sagebeil 2003:34). The Dos Hombres vessel was part of lip-to-lip cache/burial beneath the floor of range structure on the western side of Plaza A at the site (Houk 1996), and the Bolsa Verde example was recovered from a looted tomb (Sullivan and Sagebeil 2003:34). Guderjan (1991:17) speculates that vessel may have been "used for a burial," suggesting the looters encountered a tomb in Structure 25. Fragments of painted plaster were also found in the outer rubble of the looters' trench (Guderjan 1991:17).

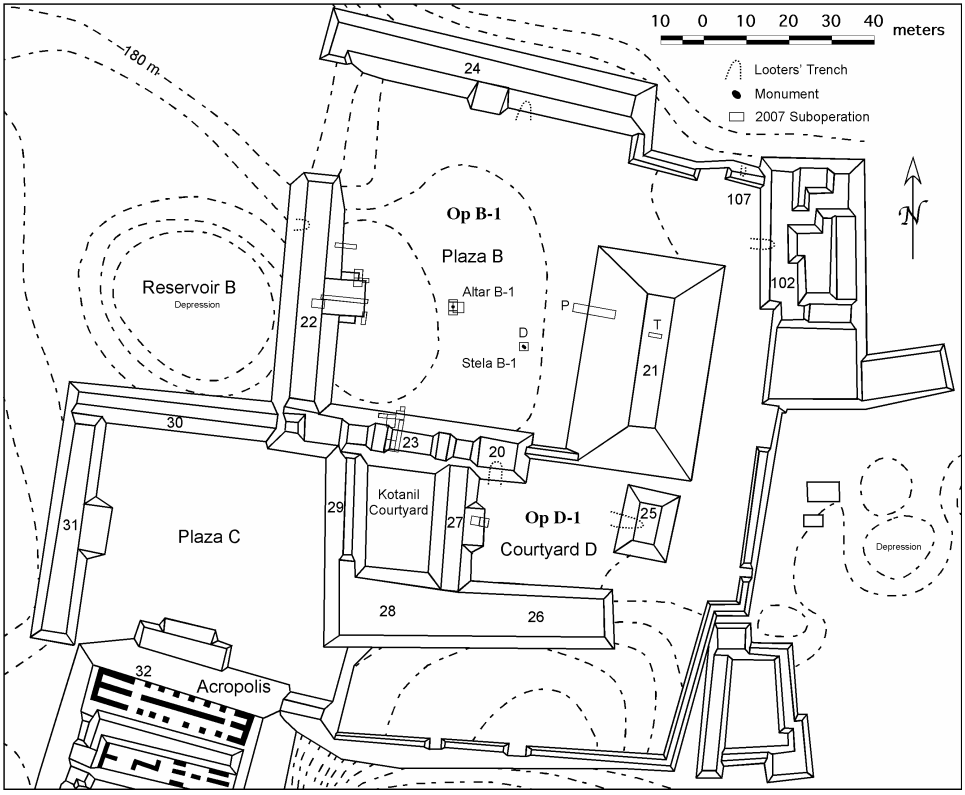

Figure 1. Map of Plaza B area showing locations of 2007 excavations. See following chapters for suboperation numbers not shown on this map. Base map courtesy of Dr. Norman Hammand and LaMAP.

LaMAP's investigations of Plazas B and C were apparently limited to mapping, examining looters' trench profiles, and limited test pitting. The test pits in Plaza B encountered shallowly buried bedrock and no evidence of a plaza floor (Norman Hammond, personal communication 2007). Tourtellot (1993:18) notes the excavation of Op. B05 through the surface of the Kotanil Courtyard, but provides no other information about those investigations. Hammond and Tourtellot (2004:292) incorrectly report that "apart from the plain Stela 14 beside the sacbe, there are no monuments in this area" except for a plain altar in a courtyard west of the Acropolis. None of the structures surrounding Plazas B or C or Courtyard D were excavated by LaMAP.

Vernon Scarborough led a study of water control features at La Milpa in 1992, in association with the early investigations by LaMAP. His team "systematically grid surveyed and cored" the depression west of Plaza B, "revealing a surface area of 2,165

m^2 and a depth of 5.2 m" (Scarborough et al. 1995:111). They estimate the volume of the depression to be 5,975 m^3 (Scarborough et al. 1995:111).

Description of Plazas B and C

Plazas B and C are part of the southern area of La Milpa, which "is reached from the Great Plaza by a sacbe sloping down between Structures 3 and 8 and then cutting southeast to enter Plaza B at its northwest corner" (Hammond and Tourtellot 2004:292). The two plazas, several courtyards, and the Acropolis form a contiguous and complex arrangement of architecture related to the Late Classic florescence of the site. Additional investigations will be needed to clarify the construction sequence of the southern area, but it is likely that it followed a unified and coherent plan, one that was perhaps never completed.

Plaza B is the second largest plaza at La Milpa, but is less than half the size of the Great Plaza. It covers 8,170 m^2, including the area under and east of Structure 21 (Tourtellot 1993:18). If Plaza B is thought of as being bounded by Structure 21, rather than extending under it, the plaza's size is reduced to 75 m by 58 m (4,350 m^2). The northern, western, and southern margins of the plaza are defined by range structures. Structure 22, on the east and Structures 23 and 20, which form the southern side of the plaza, are connected, closing off the southwestern corner of Plaza B. A series of low mounds wrap around the northeastern corner and eastern edge of the plaza behind Structure 21.

Hammond and Tourtellot (2004:292) note, "the surface of Plaza B is a sloping natural land surface lacking floor construction." Curiously, the low point in the plaza is in front of Structure 22, suggesting there is a drain system built beneath Structure 22 to channel rainwater from the plaza to the depression west of the plaza, which Scarborough et al. (1995) refer to as Reservoir B. The depression and associated drainage behind Structure 22 were not studied in detail by Scarborough et al. (1995:111), but they speculate that Reservoir B was used to retain water for dry season release into two drainages, which pass west of the Acropolis. Tourtellot (1993), however, disagrees with this conclusion.

Structure 21 is the fifth largest pyramid at La Milpa, and was originally thought by LaMAP archaeologists to be a Late Preclassic building (Tourtellot 1993:11). More recently, however, Hammond and Tourtellot (2004:292) concluded that Structure 21 "lacks a front stair, masonry facing, and a superstructure, and contrary to previous opinions appears to have been abandoned unfinished." The mound measures approximately 52 m long by 30 m wide and 18 m tall. Its summit is nearly level and measures approximately 9 m wide by 28 m long. Despite its size, the looters who pillaged the other four large pyramids and numerous smaller structures at La Milpa left Structure 21 untouched.

Structures 20 and 23 are a combined 51 m long. Structure 22 is approximately 55 m long, and Structure 24 is 77 m long. These range structures average about 7 m high, and

presumably supported rooms along their summits. Structure 22 clearly has a stairway, as does Structure 24. No stairway is evident on the northern face of Structures 20/23, but excavations, discussed below, show that the face of the entire range structure may have been stepped.

Previous maps of Plaza B depict a gap between Structures 20 and 21, which would have allowed access between the plaza and Courtyard D. Surface indications suggest, however, that the two buildings were connected by a two-meter high platform, which may have been stepped on both its northern and southern faces.

The more important change over earlier versions of the plaza map, however, is the inclusion of Altar B-1 and Stela B-1, two monuments that were not previously reported (see below). The altar is in the middle of the plaza between Structures 21 and 22. The stela is in front of Structure 21.

The few looters' trenches recorded in Plaza B include a small trench on the southern face of Structure 24, east of the stairway, and a small trench on Structure 102 in the northeastern corner of the plaza. The LMCP noted two trenches not depicted on previous versions of the map: a small trench on the back of Structure 22 and a very small excavation on the back of Structure 107. None of the trenches has been examined to date by the LMCP.

Courtyard D, which Guderjan (1991) had originally called Plaza D, is a bounded by Structure 20 on the north, Structure 25 on the east, Structure 26 on the south, and Structure 27 on the west. Structure 25 is presumably a small temple and eastern shrine, which has been pierced by a centerline looters' trench, as discussed above. Structure 20 has also been looted. Structure 27, a range structure connected to Structures 23 and 26, faces this small temple and has a stair leading down into the courtyard. Structure 20 is an odd mound with a wide summit, which Tourtellot (1993) mapped with a series of rooms on its summit.

South of Courtyard D is a wide platform that Tourtellot (1993:19) designated Feature 192, which may be a *sacbe* connecting Plaza C to Courtyard D and Plaza B. The feature is flanked on the south by a series of very low mounds.

Plaza C, which was not investigated by the LMCP in 2007, is the third largest plaza at La Milpa. It measures 53 m north-south by 55 m east-west and is flanked by range structures on the north, east, and west. The southern side of the plaza is marked by Structure 32, the entrance to the Acropolis at La Milpa. The only entrance into Plaza C is in its southeastern corner.

A small and tightly enclosed courtyard, which Guderjan (1991) referred to as the Kotanil Courtyard, lies between the two plazas and Courtyard D. It has no obvious entrance and

is flanked by Structure 23 on the north, Structure 27 on the east, Structure 28 on the south, and Structure 29 on the west. Access to this courtyard must have been either through or over one of the surrounding range structures. Hammond and Tourtellot (2004:292) speculate that access was "through a portal vault in one of the surrounding range structures," but this remains to be tested.

Previous Interpretations of Plaza B Area

Tourtellot et al. (2003:47) have speculated that the complex of range structures around the Kotanil Courtyard and Courtyard D "conceivable was the residence of a second, rival party of nearly equal rank to the royal family," which resided in the Acropolis. The royal status of the Acropolis has been confirmed by a series of three thrones in Structure 38; the latter two were painted polychrome benches (Hammond and Tourtellot 2004:293).

LaMAP archaeologists have concluded that the Plazas B and C area was constructed late in the history of La Milpa and may in fact not have been finished. They report that "the large Plazas B and C were known to be of Late/Terminal Classic date with little antecedent occupation, and lacking definable plaza floors," but that "debris from Strs. 22 and 30…shows that the buildings had been completed at least to the state of applying polychrome stucco adornment" (Hammond et al. 2000:42). Most notably, they propose that Structure 21 was never completed, and "a quarry still containing stockpiles of limestone rubble blocks among the modest buildings northwest of Plaza B indicates interrupted construction activity in the area toward Plaza A" (Hammond and Tourtellot 2004:292). They suggest that the *sacbe* linking the northern and southern architectural groups may not have been finished (Hammond and Tourtellot 2004:292).

Scarborough et al. (1995) speculate that Plaza B may have served as part of the catchment area for Reservoir B, west of Structure 22. They note, however, that the associated drainage "is the lest well documented of the principal drainages identified at La Milpa." (Scarborough et al. 1995:111).

LMCP THEORETICAL ORIENTATION

The Plaza B area at La Milpa offers an excellent opportunity to investigate ancient Maya principles of site planning, defined by Ashmore (1989:272) as "the deliberate, self-conscious aspects of settlement patterning, at scales from individual structures through regional landscapes." Elsewhere, Ashmore (1986:37) described site planning as "adherence to preconceived norms for the arrangement of structures and spaces" that "is most easily recognized through repetitious patterns." Many factors influenced Maya site plans, but "it is increasingly clear that maps of civic centers evince considerable planning and meaningful arrangement in the placement of buildings, monuments, and open spaces" (Ashmore and Sabloff 2002:201). In the case of the Plaza B area, the fact that La Milpa was apparently abandoned before the construction of the southern plazas was complete means that the blueprint for the site plan may be more apparent because its

structure has not been obscured by "centuries of growth and changing spatial design," a common problem facing site planning studies (e.g., Ashmore and Sabloff 2002:201).

In the late 1980s and early 1990s, Wendy Ashmore (1986, 1989, 1991, 1992) published extensively on the ideational/cosmological factors affecting Maya site plans. She observed a site-planning template, particularly prevalent in the Petén area from the Late Preclassic through Late Classic period, and argued persuasively that that the template was linked to ancient cosmological concepts (Ashmore 1991). Her study was focused on "ancient Maya use of cardinal directions as symbolically charged positions in architectural arrangements" (Ashmore 1991:200). Ashmore (1989:273) suggested "adopting a cosmic template puts the built environment in harmony with the universe, and when, as with the Maya, specific locations within the cosmos have strong implications of power, the cultural landscape will serve to proclaim the authority of those who occupy power-imbued positions."

Ashmore (1989:273) and, more recently, Ashmore and Sabloff (2002:202) recognize a second, political function of site planning, as well—the desire to emulate other politically powerful sites. As Ashmore and Sabloff (2002:203) argue, "Another important means of enhancing the political aura of a place is by constructing it to resemble locales of established stature: If a place looks like a recognized seat of authority, people behave there accordingly." Following a similar argument, Houk (1996, 2003) proposed that Dos Hombres' site plan mimics that of La Milpa, reflecting a desire to replicate the design of the larger, more powerful site. Furthermore, both Dos Hombres and La Milpa strongly adhere to the site-planning template observed by Ashmore (1991).

At this point, the specifics cosmological concepts of Ashmore's (1991) template do not bear repeating, but the principles involving cardinal directions do. The five principles are "(1) emphatic reference to a north-south axis in site organization; (2) formal and functional complementarity or dualism between north and south; (3) the addition of elements on east and west to form a triangle with the north, and frequent suppression of the southern of marking the southern position; (4) the presence in many cases of a ball court as transition between north and south; and (5) the frequent use of causeways to emphasize connections among the cited elements, thereby underscoring the symbolic unity of the whole layout" (Ashmore 1991:200). Tourtellot et al. (2003:49) report "La Milpa Centre was converted into the Petén cosmogram (Ashmore 1991) when southern Plazas B and C with their palaces were added to the northern Plaza A." La Milpa's Late Classic plan adheres closely to four of the five principles, and, regardless of the meaning behind it, arguably follows the pattern observed by Ashmore at numerous sites in the central Lowlands.

Despite the fact that scholars have long recognized "that the position and arrangement of civic construction was anything but random" among the Maya (e.g., Ashmore and Sabloff 2002:202), specific research programs designed to study site planning are still

rare. Obviously, many factors affected the plan of large Maya sites like La Milpa, but Ashmore and Sabloff (2002:202) call for more research "to establish the *mix* of ideational, social, environmental, economic, engineering, historical, and other sources in observed architectural forms and arrangements." The LMCP, in essence, is a response to their programmatic suggestions urging excavations and mapping projects designed to test questions related to site planning (e.g., Ashmore and Sabloff 2003).

Site planning, or, in the case of Plaza B and its associated courtyards, "royal precinct planning" (e.g., Ashmore and Sabloff 2003:232), occurs at scales from individual structures up to entire landscapes, and the goal of the LMCP is to investigate site planning at a plaza-scale. In other words, the LMCP proposes to examine the mix of site planning principles that the Late Classic builders at La Milpa incorporated into their design of the southern plazas. While directionality and symbolic associations may have played a part in the plan of Plaza B, so too must have practical engineering concerns related to control and managing the flow of rain runoff, which would have accumulated in the plaza, and functional concerns (i.e., how did the buildings themselves function?). As noted above, because the plan may not have been completed, subsequent architectural programs have not obscured it. The goals then are to decipher the factors that affected one particular Late Classic site's royal precinct plan and, hopefully, to develop an approach that can be employed at other sites. As Ashmore and Sabloff (2003:233) note, site-planning studies are difficult because "the central challenge is not whether political or cosmological symbolism might be expressed in architecture and space, but whether and how one can recognize when such symbolic communication has taken place."

Working from a site planning perspective, the approach of the LMCP is to (1) define as precisely as possible the chronology of the Plaza B area through structural and plaza testing, including a determination of which buildings or spaces were never finished and which may have been used and/or remodeled; (2) assess the function of the major buildings; (3) investigate plaza drainage patterns and the relationship between Plaza B and Reservoir B; and (4) evaluate the patterning of monuments, ritual deposits, and material culture in the plazas and structures in light of the proposed ancient Maya concern for directionality and symbolism. As the project progresses, these goals will be revisited and revised as necessary.

2007 METHODOLOGY

Plaza B is included in the portion of the site that PfB keeps relatively free of undergrowth, but it was necessary to bush parts of the plaza as well as the structures targeted for initial excavation. The plaza-oriented faces of Structures 22, 23, and 27 were cleared of undergrowth, as was the summit of Structure 22.

The 2007 season included excavations in Plaza B and the adjacent Courtyard D at La Milpa (see Figure 1). La Milpa has been designated Rio Bravo (RB) 25 in the PfBAP's list of sites in the region. All investigations in Plaza B were included in Operation (Op)

B-1, and the Courtyard D excavations were designated Op D-1. Excavation units in each operation were assigned consecutive Suboperation (Subop) designations beginning with "A." Within each suboperation, excavations preceded by "lots," which represent discrete natural or cultural depositional units. Lots were numbered consecutively within each suboperation. Artifacts were collected by lot, which represents the smallest unit of provenience. Because the PfBAP laboratory processes materials collected by multiple independent field projects, the full provenience information was reported for each bag of artifacts. For example, the abbreviation RB25-B1-A-1 indicates the artifact was collected from Lot 1 of Subop A in Op B-1 at La Milpa.

SUMMARY RESULTS OF THE 2007 INVESTIGATIONS

Monuments

During the initial inspection of Plaza B, LMCP archaeologists identified two apparent monuments that were not reported by previous projects. They include a stela in front of Structure 21 and a small altar in the center of the plaza approximate midway between Structures 21 and 22. Because LaMAP did not number altars and because the LMCP did not have a updated list of LaMAP stelae numbers, these two monuments have been assigned temporary designations: Altar B-1 and Stela B-1.

Stela B-1 (see Figure 1) is a small, uncarved monument lying flat along the approximate centerline of Structure 21 several meters west of the base of the mound. At approximately 120 x 100 cm, Stela B-1 is among the smallest, if not the smallest, stela at La Milpa. The monument is oriented 135° east of north. Initially, Subop D, a 2.5 x 2.5 m unit was opened, centered on the feature, but quickly abandoned; the context of the stela was called into question when the end of a wooden digging stick and apparent fulcrum stones were found in the topsoil of the unit. It appears that the stela was turned by someone in the last 10 years, and Subop D was abandoned in favor of units with fewer contextual issues.

Altar B-1 is roughly circular in plan, measuring 75 cm in diameter and approximately 30 cm high. It is a shaped block of limestone but lacks carving. Although small for an altar, the monument's central location in the plaza and similarities to Altar 1 at Dos Hombres prompted investigations. Because a cache of approximately 150 obsidian blades was found directly beneath the altar at Dos Hombres, excavations at Altar B-1 initially removed the topsoil in a 2 x 2 m suboperation around the altar, which was then rolled out of the unit. Excavations then commenced in the 1-x-1-m portion of Subop C directly beneath the altar to recover chronological data. Although no obsidian cache was found in this case, the 1 x 1 m excavations encountered a dense concentration of chert flakes in the fill beneath the altar, causing the excavators to expand the unit. Ultimately, the flakes were determined to be part of Cache B-1, an extensive and complicated deposit, which required additional excavation units to be appended to Subop C. Ultimately, the altar and Cache B-1 excavations involved Subops C, K, R, and Q (see Trein, this volume:Figure 2).

The excavations confirmed the presence of a plastered plaza floor it the area of the altar, represented only by a thin lens of small marl pebbles below the topsoil and immediately above and intermixed with small cobble construction fill. Below the small fill, excavators documented two distinct contexts were revealed: the lots relating to Cache B-1, directly underneath and east of the altar and within a small to medium cobble construction fill (5–20 cm diameter); and a layer of large cobble construction fill (over 20 cm diameter), set in a loose silty-loam soil matrix in the eastern and a compact clay-loam matrix in the western side of the units. The large cobble construction fill seems to define the horizontal limits of the cache and was also demonstrated to be present underneath the deposits of Cache B-1 (see Trein, this volume: Figures 3 and 4).

Five primary artifact clusters made up the cache. The ceramic vessels associated with the cache had all been crushed by the surrounding construction fill, but several partially reconstructable vessels were included in the deposit. The total artifact assemblage included approximately 1,000 sherds, 4,956 pieces of debitage, five lithic tools or fragments, 16 greenstone beads or fragments, 11 pieces of shell or coral, two fish vertebrae, one burned seed, two small pieces of charcoal, and one obsidian blade. Most notable among the ceramics was a jar-and-lid pair with a mat design incised on the lid (Figure 2).

Based on the ceramics, the cache and construction fill date to the Tepeu 2–3 phase of the Late Classic, which is consistent with LaMAP's initial interpretation that the plaza was constructed late in the history of the site. The contents of the cache, as well as its apparent association with Altar B-1, suggest its placement was related to the dedication of the plaza. The mat design is commonly associated with rulership, suggesting the cache's placement may have been a politically and religiously significant ceremony. There are many issues related to the symbolism of the artifacts in the cache that need to be researched further. In particular, the chert deposit is intriguing; as Debra Trein (this volume) observes, the lack of hammerstones and cores in the deposits suggest that the flakes were not produced at the plaza, meaning they were brought in from another location(s). For example, is there some significance tied to the fact the flakes appear to have been collected specifically for the cache, or is the origin workshop or producers of the flakes somehow important?

Structure 21

Structure 21 is the largest mound in Plazas B and C, and, with its rectangular base, flat summit, and no evidence of a stair, the structure is different from the other temples at La Milpa. In general, the Late Classic architecture at the larger sites in the region is characterized by platforms supporting superstructures with either full-height walled or vaulted rooms. Based on its unusual form, LaMAP researchers concluded that Subop P was the largest unit opened in 2007, a 2 x 10 m unit on the western face of the building, north of the structure's centerline. The excavations were challenging and initiated too late

Figure 2. Partially reconstructed lid from Cache B-1 with incised mat design (photographs by Norma Alicia García Huerta).

in the season to complete. The unit encountered generally cobble- to small boulder-sized fill in a loose, marly matrix. In places, as much as 1.25 m of material was removed, but it was not clear whether the excavations were in collapse debris or structural fill.

Subop T was excavated on the flat summit of the mound, oriented seven degrees east of north. The unit was initially 1 x 2 m, but was expanded another 1 m to the east. Small marl pebbles mixed with the humus suggest the surface may have been plastered at one point. Beneath the topsoil was small cobble fill, which covered an earlier, poorly preserved plaster floor approximately 90 cm below the surface. This eroded plaster surface had a concentration of ceramics and burned clay on it, possibly representing a termination deposit or debris left on the surface prior the deposition of the overlying fill.

While Subop P did not encounter evidence of intact architecture, the excavations in Subop T on the summit of Structure 21 discovered evidence that the top of the building may have been plastered and encountered an earlier plastered surface 90 cm below the surface of the mound. Neither discovery, however, conclusively demonstrates that the building was finished. The ceramics from the buried plaster surface are Tepeu 2–3 types.

Structure 22

The 2007 season of the LMCP targeted Structure 22's central stair and eastern face with seven suboperations. The excavation plan on the structure was to identify the corners of the stairs, determine the centerline of the stairs, expose the center of the stairs from plaza floor to platform summit, and, thus, enter the building on top of the platform. A secondary goal was to explore the architecture of the platform itself north of the stair and to look for evidence of a drain leading from the plaza to Reservoir B, west of the structure.

The excavation of Subop I on the eastern face of the mound determined that Structure 22 platform is stepped; a series of six steps attributed to the latest phase of construction was exposed. Interestingly, no evidence of a plaza floor was encountered at the base of the platform. Unfortunately, Subop I did not encounter a drain. The excavations encountered cobble fill beneath the topsoil at the base of the mound and terminated on bedrock 1.15 m below the surface. A 20-cm zone of gravelly clay-loam, which may represent a buried soil, was encountered above the bedrock. Ceramics from the fill included Tepeu 2–3 types with Chicanel types mixed in the clay-loam above bedrock.

The other suboperations on Structure 22 targeted the buildings stair, defining its basal corners and exposing a centerline 1 m strip of stairs from the plaza to the summit of the building. The excavations determined that the stairway, and presumably the building, has two major construction episodes with several modification events to the final phase. The excavations partially exposed the outline of the eastern wall of the structure on the summit of the mound before the season concluded.

At the eastern end of Subop N, the 1 m wide excavation used to expose the centerline of the stairs, a plaza floor was discovered at the base of the lowest step. Plaza floor was also exposed in Subops A, E, J, and M, but not I. Either the floor was never finished across the entire plaza, or the preservation in Subop I was particularly bad.

Below the plaza floor in Subop N, excavators encountered Cache B-2, a dense cluster of artifacts placed on the approximate centerline of the stairway. The cache included obsidian blades, marine shells, coral, one obsidian eccentric biface (Figure 3A), one chert eccentric biface (Figure 3B), two *Spondylus* shell pendant fragments, shell beads, jade beads, unidentified spines (stingray?), and a few ceramic vessel fragments that are not clearly associated. One of the *Spondylus* shell fragments is incised with what may be an image of the Maize God (Figure 3C), although the design is not very clear (David Stuart, personal communication, October 2007). The objects may have originally been bundled together in a perishable container (a bag or basket), but were encountered loose in a marly matrix with small cobble construction fill. The cluster had an east-west dimension of 20 cm, extended from the southern wall of the suboperation 25 cm into the unit, and was 4 cm thick. The cluster continues beyond the excavations and will be targeted in 2008. The cache has not been completely excavated, nor has it been fully analyzed. It will be interesting to examine the patterning of artifacts to look for significant placements related to cardinal directions and for layering of artifacts by ritual or cosmological association. For example, at Blue Creek, Guderjan (2007:26) has noted a common pattern in dedicatory caches of a primordial sea-earth-heaven layering effect, usually in lip-to-lip caches. Interestingly, this pattern is a Late Preclassic–Early Classic one at Blue Creek (Guderjan 2007:26). While we suspect that Cache B-2 is a Late Classic deposit, David Stuart (personal communication, 2007) notes that the image incised onto the *Spondylus* shell from the cache is an Early Classic style of depicting the Maize God.

Structure 23

Structure 23, combined with Structure 20, forms the southern boundary of Plaza B. It is articulates with Structure 22 to completely enclose the southwestern corner of the plaza. It also serves as the northern structure in the Kotanil Courtyard, the tightly enclosed space between Coutyard D, Plaza C, and Plaza B. Unlike Structure 22, this long range structure has no visible evidence of a central stairway.

To avoid a large fallen tree, excavations on Structure 23 began west of the centerline at the base of the mound with Subop B, a 2 x 2 m unit. Ultimately, seven suboperations (Subops B, F, G, H, L, O, and S) were excavated on the structure to expose the final construction phase and to test the plaza in front of the building.

Excavations at Structure 23 reveal that the building is a stepped platform with five steps that apparently run the entire length of the structure. The platform appears to serve as a foundation for three separate buildings; the 2007 excavations partially exposed the central building. The central structure shows evidence of a one-meter-thick front wall

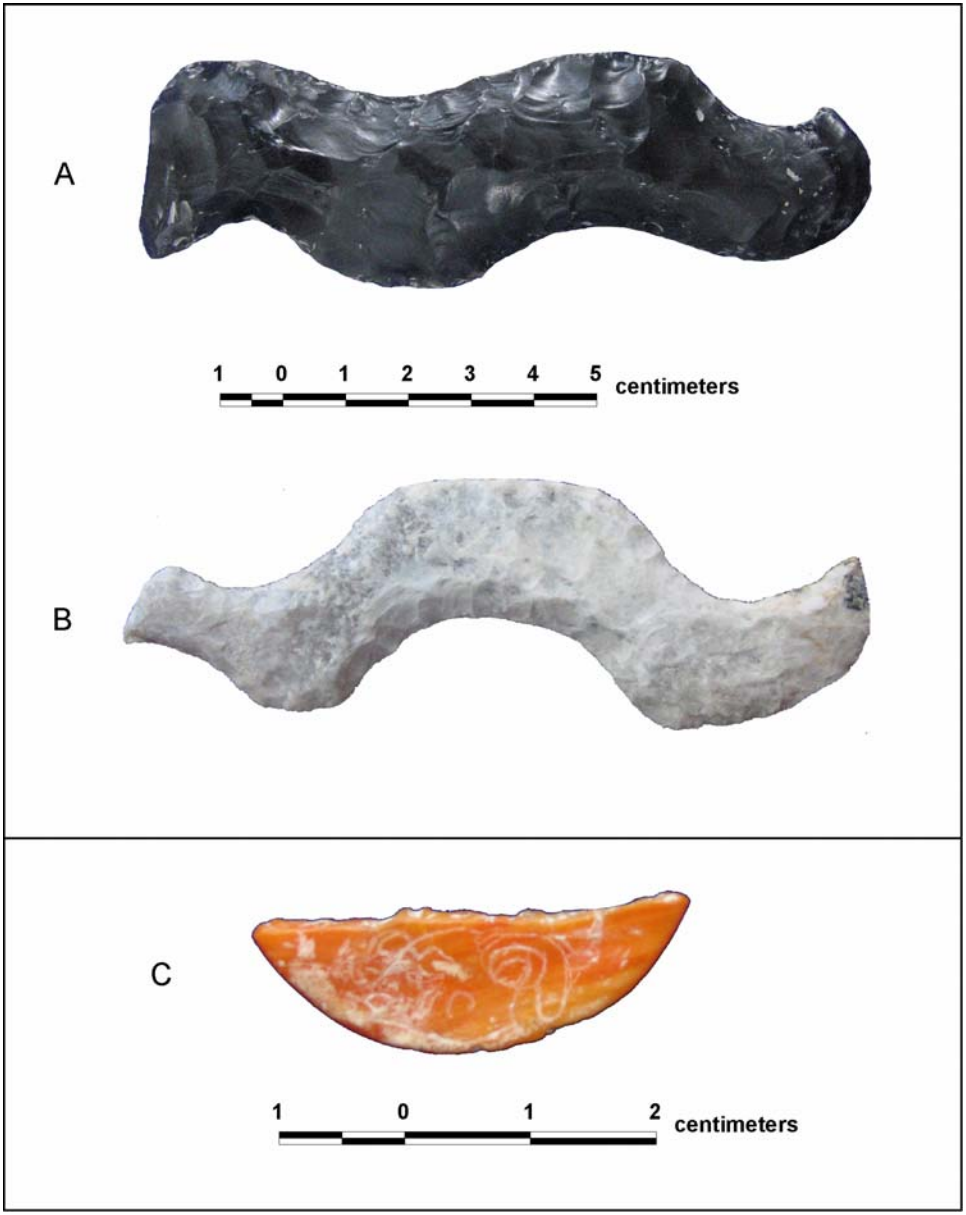

Figure 3. Selected artifacts from Cache B-2. A: obsidian eccentric; B: chert eccentric; C: incised shell pendant fragment with possible image of the Maize God.

with a back wall enclosing a narrow space with a plaster floor. It is possible that this space (a corridor or small storage room?) was intentionally filled to provide a living surface on the summit of the building. Excavations on the summit of the mound encountered what appeared to be a prepared surface with a fairly dense artifact concentration on it. Hammond and Tourtellot (2004) suggest several buildings in the Acropolis were similarly filled and reused as platforms late in the history of the site, but additional excavations are needed to investigate this possibility at Structure 23.

Subop G was used to test the plaza construction in front of Structure 23. No plaza floor was encountered; cobble fill, which transitioned to boulder fill about 20 cm below the surface, was found beneath the topsoil and a dirt surface, which presumably served as the plaza floor. Few ceramics were found in Subop G, but some Chicanel forms were noted by the project ceramicist, Lauren Sullivan.

Structure 27

Two 2 x 2 m units were excavated on the stairway to Structure 27. This small range building faces Courtyard D and the small eastern shrine of Structure 25. Behind Structure 27 is the Kotanil Courtyard. The Structure 27 excavations were part of Operation D-1 and included Subops A and B. The two units exposed two phases of construction to the stairs as well as a thick plaster floor extending beneath the older of the two phases, suggesting a third phase is present beneath the excavated area. Continued excavation on Structure 27 will be an element of future research.

DISCUSSION

The initial excavations undertaken by TTU's LMCP clarified several issues regarding the history of the southern plazas, but did not resolve others. It appears that at least parts of the floor in Plaza B were plastered and finished, and it is clear that Structures 22 and 23 in Plaza B were finished and in use prior to the abandonment of the site. Structure 22 and Structure 27, from Courtyard D, show clear evidence of remodeling or expansion, suggesting the buildings were in use for several decades.

Excavations on Structure 21 were not completed, and, thus, it is not known if the building was ever finished. The limited data from the summit of the mound suggests that it might have been completed; and then perhaps was undergoing an expansion when abandoned.

The two caches discovered in the plaza indicate that a program of ritual deposits was incorporated into the plan for Plaza B. The contents of these two caches will undergo additional analysis, and Cache B-2 will be further excavated, in 2008.

Importantly, the LMCP investigations documented two previously unrecorded monuments in the plaza: Altar B-1, related to Cache B-1, and Stela B-1. Along with a small altar west of the Acropolis, these monuments are the only ones known from the southern plazas.

The preliminary ceramic data suggest the construction of the plazas and buildings occurred in the Tepeu 2–3 ceramic phase of the Late Classic, although trace amounts of Chicanel pottery from two of the deeper plaza test pits indicate there may be some minor earlier occupation buried beneath the Late Classic fill.

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EXCAVATONS OF MONUMENTS IN PLAZA B AND AT STRUCTURE 21: THE 2007 FIELD SEASON

Debora Trein, The University of Texas at Austin

INTRODUCTION

This chapter documents the excavations associated with Altar B-1, Stela B-1, and Structure 21 during the 2007 season of the La Milpa Core Project. These excavations were all part of Operation B-1 (see Houk, this volume: Figure 1).

DOCUMENTATION AND INVESTIGATIONS OF MONUMENTS IN PLAZA B

Initial assessment of Plaza B identified two limestone monuments that had not been previously recorded. These included a roughly rectangular limestone slab (120 x 100 x 10–12 cm), designated Stela B-1, found horizontally on the eastern side of Plaza B, approximately in line with the center axis and directly in front of the western side of Structure 21. A circular limestone block measuring 75 cm diameter by 30 cm high, designated Altar B-1, was also identified at the approximate center of the plaza, roughly equidistant to Structures 21, 22, and 23. Two excavation areas were opened to study these monuments in Plaza B: Subop D centered on the stela and the conglomeration of Subops C, K, Q, and R around Atlar B-1.

Stela B-1, Subop D

Stela B-1 is one of the smallest, if not the smallest, stela at La Milpa. It is a roughly shaped piece of limestone with no evidence of decorative carving (Figure 1). It does not appear on any previous maps of La Milpa.

Subop D was a 2.5 x 2.5 m unit, oriented north-south, encompassing Stela B-1 completely. The dimensions of the unit also allowed for the demarcation of an area around the limestone slab, which would enable the appropriate examination of the archaeological context surrounding the feature.

The stela was oriented at roughly 45 degrees west of north, which was incongrous to the general orientation of the architecture at Plaza B, most significantly Structure 21, with which the stela is associated through spatial proximity. Structure 21 has an orientation between 7 to 12 degrees east of north. Initially, this seeming difference in orientation was hypothesised to have been the product of cultural processes of monument relocation or the random way the stela fell, assuming it was originally standing. However, as excavations progressed in the topsoil a shaped piece of wood, clearly sharpened on one end by machete cuts, was discovered, forcing a reconsideration of the biases of the sample being investigated. In removing the topsoil, a number of smaller limestone fragments were discovered placed underneath the larger limestone feature on its southern edge; these stones were probably used as a fulcrum to, along with the shaped log, turn the

Figure 1. Photograph of Stela B in Subop D, facing south.

stela. Due to evidence of modern tampering and movement of the monument, it was decided to abandon the unit.

Altar B-1, Subops C, K, Q, and R

Altar B-1 is roughly circular in plan, measuring 75 cm in diameter and approximately 30 cm high. It is a shaped block of limestone, but lacks carving. Although small for an altar, the monument's central location in the plaza prompted investigations. This monument, like Stela B-1, does not appear on any previous map of La Milpa. The first unit to be laid out was Subop C, a 2 x 2 m united oriented north-south, using the stone feature as its central reference point in its layout. As excavations in Subop C progressed, it became clear through the uncovering of a number artifact clusters extending beyond the boundaries of the established unit, that the excavations would have to be extended to the southeast in order to appropriately investigate the existent archaeology. This generated the creation of Subop K, originally an L-shaped unit abutting Subop C in its northwestern corner. When the distribution and association of the artifact assemblages within the Subop C-K cusp became apparent, it was decided to make Subop K the predominant unit within the group and reduce Subop C to an L-shaped unit to the north-west of Subop K. This was done to avoid dividing associated artifacts into two distinct lots in separate units when they were clearly part of one continuous assemblage.

In light of the findings in Subops C and K, it was also decided to extend the units north and south (Figure 2). Subop Q was an irregular unit measuring 2 m long by 0.5 m to 1 m wide, abutting Subops C and K at its northern perimeter, while Subop R was a 2-x-0.5-m unit, adjoining Subops C and K along its southern boundary. The stratigraphic sequence uncovered in Subops C and K was successfully followed in Subops Q and R (Table 1). Due to stratigraphic continuity, these units are treated as a single entity in this report.

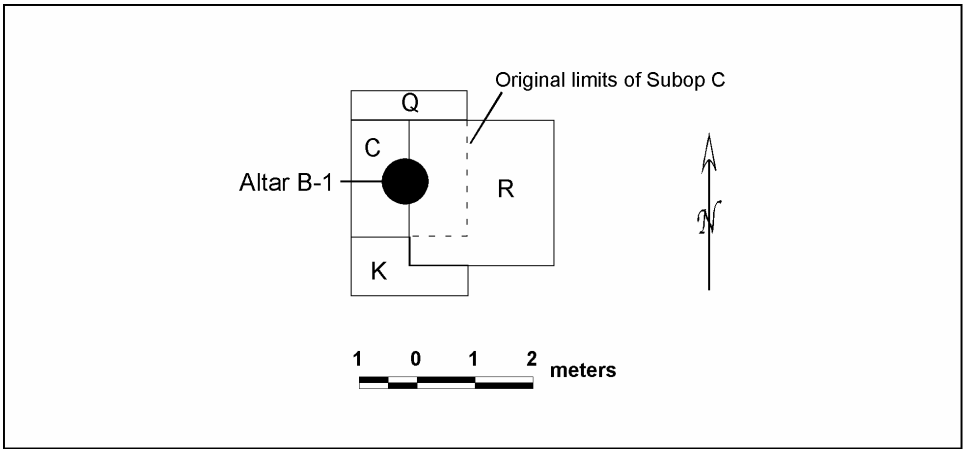

Figure 2. Final arrangement of subops at Altar B-1 and Cache B-1 excavation area.

Table 1.The Stratigraphic Sequence of Lots in Subops C, K, Q, and R, in relation to each other.

Description	**Subop C**	**Subop K**	**Subop Q**	**Subop R**
Humus	1	1	1	1
Altar B-1	2	-	-	-
Remains of Plaster Floor, Small to Medium Cobble Construction Fill	3, 4, 5	2, 10	2	2
Cache Deposits	6 (later K - 3), 7	3, 4, 5, 6, 8, 9	-	-
Large Cobble Construction Fill	8	7	3	3
Bedrock	9	-	-	-

Excavations confirmed the presence of a plastered plaza floor it the area of investigation, a significant discovery considering the fact previous researchers had concluded the plaza was never plastered (Hammond and Tourtellot 2004:292). However, the minute and infrequent nature of the surviving plaster fragments impeded its distinction from the small cobble construction fill and its own lot designation. Below this layer, two distinct contexts were revealed: the lots relating to Cache B-1, located centrally, directly

underneath and east of the altar on the surface and within a small to medium cobble construction fill (5–20 cm diameter); and a layer of large cobble construction fill (over 20 cm diameter), set within a loose sandy matrix in the east and a compact clay matrix in the west side of the units (Figure 3). The large cobble construction fill seems to provide a horizontal boundary for the Cache B-1 (Figure 4) and was also demonstrated to be present underneath the deposits of Cache B-1. Cache B-1 is a chronologically contemporary, though diverse, artifact assemblage, comprised of a number of materials and artifact types, deposited directly below and to the east the altar (Table 2).

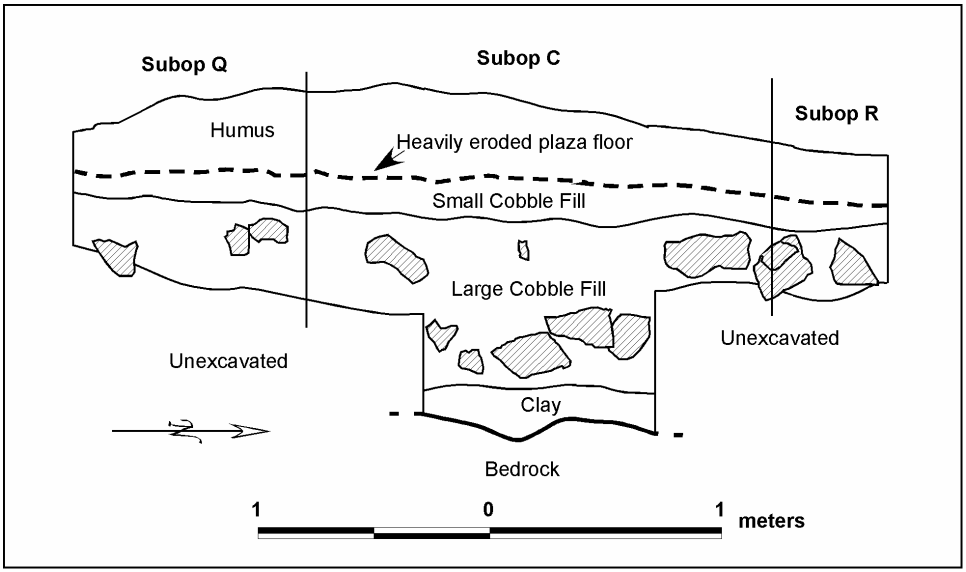

Figure 3. Western profile of Subops Q, C, and R (field drawing by Shannon Smith, Danielle Akers, and Debora Trein). The humus layer appears mounded because of a thick layer of cohune nuts.

There were five primary artifact clusters in Subops C, K, Q, and R (Figures 4 and 5). Lots K-4, K-5, K-6, and C-7 represented ceramic clusters and other associated artifacts. Lot K-4 was located to the northeast of the stone feature, and was the most fragmented due to the positioning of large cobble construction fill directly above and surrounding Lot K-4. This lot included 405 undecorated ceramic sherds, loosely positioned together, one fish vertebrae, one carbon speck, four green stone fragments, and six shell fragments. The depositional process that influenced the preservation state of Lot K-4 may have displaced a number of artifacts that were originally found within the Lot K-4 ceramic vessel, including Lot K-8 (four green stone fragments) and a piece of coral.

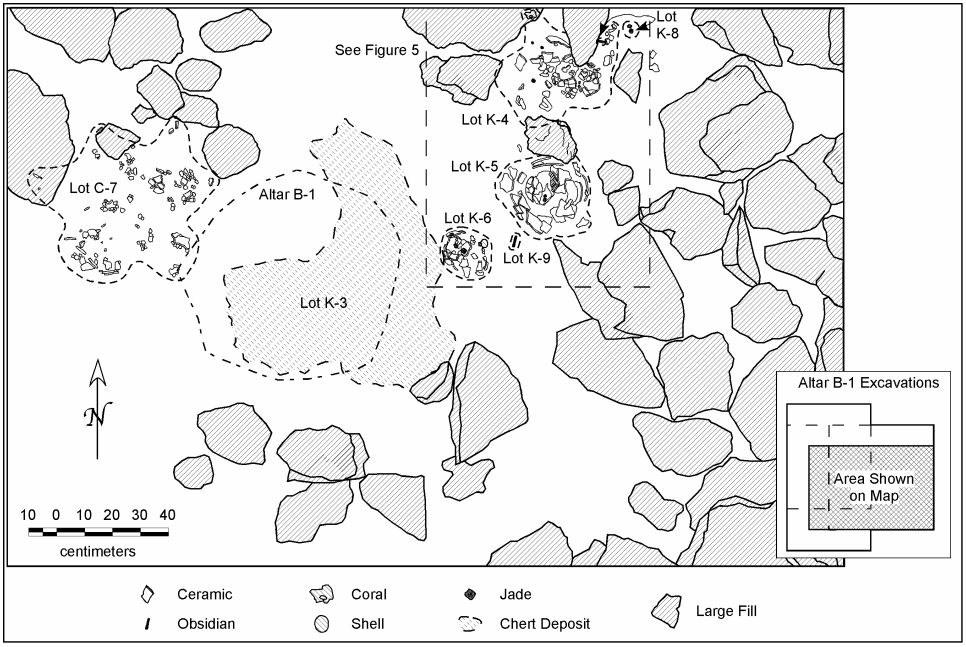

Figure 4. Plan map of Cache B-1 (field drawing by Christina MacDonald, Michael Henson, and Debora Trein).

Table 2. Cache B-1 Inventory

Type	**C - 7**	**K - 3**	**K - 4**	**K - 5**	**K - 6**	**K - 8**	**K - 9**	**Total**
Ceramic Sherds	75–100	-	405	452	72	-	-	1004–1029
Lithics	-	4961	-	-	-	-	-	4961
Green Stone	-	-	4	2	6	4	-	16
Shell	3	-	6	1	1	-	-	11
Bone	-	-	1	-	1	-	-	2
Carbon	-	-	1	-	1	-	-	2
Seed	-	-	-	1	-	-	-	1
Obsidian	-	-	-	-	-	-	1	1

South of K-4, the artifact assemblage in Lot K-5 consisted of 452 ceramic sherds (comprising whole vessels, forming a jar and lid pair, and one incomplete vessel), two green stone fragments, one burned seed, and one shell fragment. This assemblage was distinctive from the other associated lots due to the intricately engraved mat design encountered on the jar lid and the partial vessel.

Lot K-6 was located to the southwest of Lot K-5 and presented an assemblage similar to Lots K-4 and K-5. Seventy-two ceramic sherds relating to one single vessel were recovered in a fragmented condition, though with a clear vessel shape and perimeter. One fish vertebrae, one carbon speck, one iridescent shell fragment, and six pieces of green stone (one dark green bead, one round light green bead, one small light green bead, and two broken light green beads) were uncovered within the interior area of the vessel.

Lot C-7, a deposit of heavily eroded and fragmented ceramics, was situated directly underneath the altar. The fragile condition of the sherds hindered a definite quantification of the number of fragments excavated, though rough estimates would involve between 75 and 100 fragments. Three shell fragments were encountered in association with this deposit.

Lot K-3, a tightly-packed deposit of 4,961 chert lithics (2,057 flakes, 2,904 non-flakes, and five tools and tool fragments), was to the east and south of the stone feature. The layout of the deposit appeared to mirror the shape of the altar stone above, curving from south to east in a quarter-circle. The near absence of finished stone tools, cores, and knapping instruments seems to deny the hypothesis that this was a lithic production site. The lithics in this lot showed a great level of diversity in terms of quality, color, presence or absence of cortex, size of flake, type of platform, and termination.

The nature of the artifacts present in the cache, as well as the location of these artifact assemblages in direct association with an altar stone, centrally placed in Plaza B, leads to the interpretation that the ceramic and lithic clusters were deposited as offerings associated with the event of the placement of the altar stone. There also seems to be a political dimension to the altar-placing event, namely in the presence of mat-engraved ceramics, a motif often associated to kinship in the Maya lowlands. Moreover, the varied composition of the lithic assemblage analyzed could suggest that the substantial deposit of chert debitage was collected from geographically- and functionally-distinct lithic production workshops. The act of collecting manufactured products at one regional center could be associated to the collection of tribute and/or economic links. It could be tentatively suggested that the chert debitage is symbolic of the economic and religious allegiance of these smaller production sites to the larger political center of La Milpa. If so, the altar stone placing event would therefore be reflective of the ideological, political, and economical relationship between the center and surrounding communities.

EXCAVATIONS AT STRUCTURE 21

The distinctiveness of Structure 21, with a flat top and no recognizable sign of a stairway, set the structure apart from other known temple structures at La Milpa. Late Classic architecture is characterized by pyramid structures with roomed superstructures at the top, and the apparent absence of such superstructures in Structure 21, as observed in initial architectural assessments, has evoked questions about whether the construction of Structure 21 was completed at all. In order to shed some light into this subject, two separate units were established on Structure 21, each with distinct research questions and methodological issues, Subops P and T.

Subop P

Subop P was a 2 x 10 m feature-oriented unit located on the western side of Structure 21. It was established to examine the architectural composition of the structure, hopefully establishing whether Structure 21 was a finished building or not, as well as shed light on the construction phase sequence. In order to accomplish these objectives, the unit was laid out with a surface area of 20 m², which would hopefully provide a large enough sample size to enable a solid interpretation of findings. Due to the steep nature of the structure, approaching the structure from the bottom and excavating our way to the top was not be possible for safety reasons. The unit was thus divided informally into five 2 x 2 m portions, which were excavated separately, from the top-most sub-unit down, but still approaching each sub-unit from its lowest point in order to retain stratigraphic control.

Due to time restraints, investigations at this unit were not completed, and it is felt that the body of data gathered so far is not sufficient to allow a judicious and thorough proposal on the form, chronology, and meaning of the architecture of Structure 21. The excavations encountered large, unshaped chert and limestone boulders in a loose, marly matrix; this could either be cobble fill within an unfinished platform (one that was never faced, for example) or collapse debris covering the base of a finished building.

Subop T

This unit was initially a 1 x 2 m feature-oriented (seven degrees from north) unit placed on top of Structure 21 (see Houk, this volume: Figure 1). Its objective was to attempt to establish a chronology for the architecture on top of the structure, and also gather data regarding the activities that took place at the top of the structure, if it was indeed flat-roofed. The unit was placed north of the central axis of the structure, due to obstruction from trees and foliage at the approximate center. As excavations progressed, it was felt necessary to expand the unit 1m to the east to fully investigate a ceramic deposit as well as to provide some room for architectural preservation without compromising the sample size.

Humus appeared to be very shallow to non-existent at the top of Structure 21. The humus that was present was heavily mixed with small plaster fragments and small cobble construction fill, which indicates that the strata closest to the surface is the latest

construction phase plaster floor, extensively decayed (Figure 6). In removing the subsequent construction fill for the latest phase floor, an earlier plaster floor was uncovered, as well as a deposit of ceramics and burned clay on the floor surface. While it can be proposed that this assemblage was part of a termination ritual, the fragile condition of the floor and the scattered distribution of ceramics have so far impeded any solid interpretations of this kind.

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THE 2007 FIELD SEASON: EXCAVATIONS AT STRUCTURES 23 AND 27

Antonio Padilla, Ecological Communications, Inc.

INTRODUCTION

During the summer of 2007, students of the Texas Tech University Field School in Maya Archaeology conducted excavations at various locations within Plazas B and D at La Milpa. The following is a summary of the excavations conducted at Structure 23 in Plaza B and Structure 27 in Plaza D (see Houk, this volume: Figure 1).

STRUCTURE 23

Structure 23 is a range building along the southern edge of Plaza B, oriented slightly off a true east-west axis at about 285° (see Houk, this volume: Figure 1). At its western end, Structure 23 joins Structure 22 to enclose the southwestern corner of Plaza B. As mapped by Boston University, the Structure 23 and Structure 20 share a common platform, forming the southern side of the plaza and measuring approximately 45 m long and up to 5–7 m high. The southern side of Structure 23 faces the Kotanil Courtyard, while the southern side of Structure 20 faces Courtyard D.

Operation B-1, Suboperations B, F, G, H, L, O, and S

Excavations at Structure 23 consisted of various units (Subops B, F, G, H, L, O, and S) within Operation B-1 (Figure 1). These excavations consisted of both vertical penetration to record construction histories and horizontal exposures to pursue architectural alignments. Due to large tree stump, excavations at the center of the structure were impossible. Therefore, our excavations were placed on the western half of the structure.

All excavation units located at Structure 23 stemmed from an original 2 x 2 m unit designated Subop B. Subop B was placed 6 m west of the centerline of the structure along the base of the mound. Subops F and H, both 1 x 2 m units laid end-to-end, extended west off the southwestern corner of Subop B. Subop G was a 1 x 1 m extension unit, north, off the northeastern corner of B. Subop O, located directly south of Subop F measured 2 x 2 m. Subop L was a 1 x 7.5 m unit that extended from the southeastern corner of Subop B along the face of the mound to the middle of the summit of the structure. Our final Subop, Subop S, was a 2.5 x 2.5 m unit extending off the southwestern corner of Subop L. The purpose of our excavations was to expose the last construction phase and to gather information related to the function and age of Structure of 23.

Excavation of the units situated along the bottom half of Structure 23 (Subops B, F, G, H, and O) revealed the latest phase of construction of the building (Figure 2). Exposure of the outer facing of the building was first discovered in Subop B. Although there was only

a 2 x 2 m exposure, the three basal steps along the face of the structure were visible. Each of the steps measured 20 cm in height and about 20–30 cm in depth. Possibly due to extensive collapse and erosion, there was no evidence of plaster plaza floor at the base of the structure.

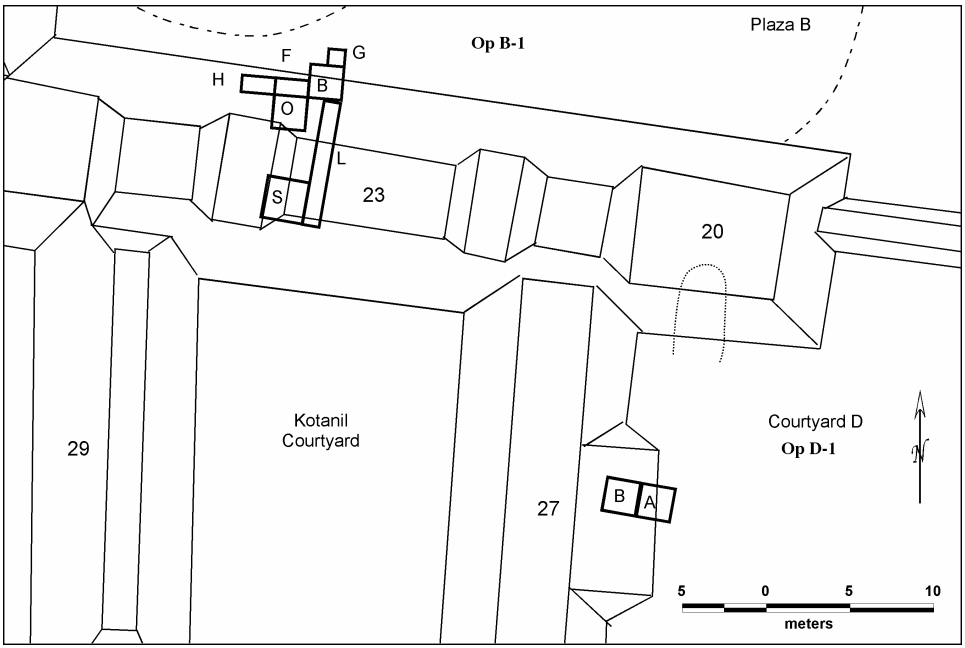

Figure 1. Map of excavation units at Structures 23 and 27.

In an attempt to find the plaster floor seen in Subop C (see Trein, this volume) and at the base of Structure 22 (see Barrera, this volume), a 1 x 1 m extension to the north of Subop B was established. Excavation of this extension, Subop G, mainly consisted of structural collapse and topsoil above the level of the plaza. All the debris was excavated down to the base of the steps to come down on the anticipated level of the plaster floor. However, remnants of a plaster floor were not present. Excavations only revealed large limestone cobble fill, for the construction of the plaza, below the level of the base of the steps. It is possible that the plaza floor observed in the center of the plaza and at the base of Structure 22 was heavily eroded toward the base of Structure 23 or that a dirt surface served as the plaza floor in that area.

Excavation along the face of the structure continued with Subops F and H to expose more of the steps, as it was not clear if Subop B had encountered part of a stair or if the entire face of the structure was stepped. Based on the topographical features of the unexcavated area of the structure, it appeared that there was a break in the steps, and Subop F was

established to uncover the corner of the steps. Excavations revealed that, rather than a corner, several stones were simply missing, probably from damage from the extensive collapse observed in all our units. These stones were only missing from the uppermost step of the three excavated; the two lower steps continued westward and were excavated in Subop H. Our excavations suggest the steps probably run the entire length of the structure.

Figure 2. Photograph of final phase of architecture as exposed in Subops B, F, H, and O, facing south.

Examination of the break in steps seen in Subop F continued in Subop O, a 2 x 2 m unit located directly south of Subop F. Excavation of this unit revealed two other steps continuing up the structure, giving the platform a total of three steps apparently running the length of the building. These higher steps were similar to the previous three exposed in Subops B, F, and H, and extended westward beyond our excavations. Directly above these steps, three more stone alignments were encountered. However, these steps came to an end, at approximately 1.2 m from the eastern wall of the unit. Excavation in this area of the unit produced many painted pieces of broken plaster and stucco, suggesting that this area was once plastered.

Subop L, a 1 x 7.5 m unit extended up the face of Structure 23 to its summit, exposing the same two steps found in Subop O. However, unlike the steps exposed in Subop O, these

steps lead to a platform that supported another series of steps. The steps on the platform were hard to discern from the collapse material; however, a pattern was seen in the profile. The profile revealed a total of four steps leading to a five-course wall comprised of cut limestone. Much of the northern face of the wall had collapsed outward; however, the southern face was better preserved. Nevertheless, excavations south of the wall were problematic; construction material and collapse material were jumbled and cemented together.

Approximately 1.15 m south of the northern wall of the building, excavations encountered the northern face of another wall, which we originally thought to be a spine wall. Additional excavations will be needed to clarify and define what was observed. Excavations vertically between the back wall and possible spine wall revealed what appeared to be a narrow room or corridor measuring 1 m wide, with a plaster floor approximately 85 cm below the tops of the cut stones (Figure 3). The plaster floor was well preserved in some areas especially along the back wall and spine wall. At the center of the room the plaster was not as easily detected, and excavators accidentally broke through the surface of the floor.

Unfortunately, there are several significant unresolved questions about the space described above. First, it is not entirely clear if the room or corridor was filled with collapsed debris or if it had been intentionally filled. The material filling the space was extremely compact; a mixture of marl, melted plaster, and limestone rocks. The degree of compactness, in one sense, argues for its being intentional fill. However, elsewhere at La Milpa, rooms had been infilled with dry-laid cobbles preceding a new construction event. Second, the status of the possible spine wall is problematic. It is possible the so-called spine wall was in fact part of the cemented collapse debris/fill in the room; it appears that the plaster floor in the room, instead of lipping up where it meets the spine wall, continues under it. A final problem is defining the function of the space itself. If the southern feature is a spine wall, then the “room” was too small for residential use such as sleeping quarters.

In order to address the problematic situations encountered in Subop L, a 2.5 x 2.5 m unit (Subop S) was extended off Subop L’s southwestern corner to the west. The purpose of Subop S was to see if the spine wall continued across the top of the structure, whether we were in a room, and if the room had been filled in for a larger living space on top of the structure.

Excavations of Subop S were slow-going due to the large amount of collapse debris mixed with numerous lithics and ceramics. Ceramics and lithics were present near the surface across the entire unit. The amount of ceramics and lithics found within Subop S and the portion of Subop L across the top suggest that this may in fact have been a living surface. Much of the collapse was vertically oriented suggesting that there was a permanent structure define this area, perhaps a wall. Within the unit there was a change

in soil color and texture across the unit. This suggests that this may have been a compact dirt floor serving as a living surface.

Figure 3. Photograph of "room" on Structure 23, facing east. The outer wall of the building is visible to the left, while the possible spine wall is visible to the right. The plaster floor, which was broken through during excavations, is visible at the base of the two walls. The unexcavated area at the top of the photo is either collapse debris or compact fill in the room.

A cluster of ceramics was encountered at the southern end of the unit. This cluster appeared to be the remains of a wide shallow pot with broken pieces of other vessels in and around it. The nature of this deposit is not clear. Due to the amount of ceramics found with in the unit, it appears that many vessels were smashed, as if some sort of termination ritual occurred. However, it is possible that the inhabitants, if the summit of the mound had been used as a living surface, just left their belonging behind, and with time these materials eventually broke and became scattered across the structure.

Another interesting feature found within Subop S was a large cut stone block at the northwestern corner of the unit. This cut limestone block is in alignment with the edge of the steps found in Subop O, suggesting there is a continuous alignment of stones down the face of the structure. To the west of this alignment is a depression in the mound that extends about 5 m to the west. It is possible that this depression may be a landing or walk

way from Plaza B to the Kotanil Courtyard south of Structure 23. Evidence supporting this notion comes from the painted plaster and stucco found in Subop O. Further investigations of this area are needed to determine this.

Summary and Conclusions

Excavations at Structure 23 reveal that the building is a range structure with five steps that run the entire length of the basal platform shared by Structures 20 and 23. The platform serves as a foundation for three separate buildings, which may have their own steps that ascend to their summits. Our excavations targeted the western half of the central building. West of this building is evidence of a possible landing or access way to the Kotanil Courtyard, seen in Subops O and S. Due to the importance of symmetry in Maya architecture, it is suspected that a similar corridor is present on the eastern half of the central mound as well.

Within the central building of Structure 23 a room was encountered; however, its functionality has yet to be determined. The central structure has a 1 m thick northern wall with a back wall enclosing a room (or other space) with a plaster floor. This space measures 1 m wide. Whether or not the room was filled intentionally or by post-abandonment collapse debris has yet to be resolved. We have, however, good evidence of inhabitants utilizing the summit of the mound.

Future research at Structure should include, but not be limited to the following:

1. The continued excavation of Subop S to clarify the nature of the room located at the top of Structure 23. Excavations of this unit should allow us to better determine whether or not the room had been intentionally filled or filled with collapse debris, if there is a true spine wall at the back of the room, and if the plaster floor continues south. These excavations will also help in determining if there is a compact dirt floor along the top of the structure.

2. Excavations of Subop L should continue south across the summit of the structure. This in combination with the continued excavations at Subop S should provide us with a better picture of a compact dirt floor if one exists, and the extent of the plaster floor discovered in the room.

3. Along with these excavations, a trench continuing from Subop L across the back of the structure, into the Kotanil Courtyard, is needed. The purpose of this extension is to expose the final construction phase of the entire building, within a one-meter section.

4. Other excavations needed include an expansion of Subop O, either to the south or west and excavations along the base of Structure 23. An extension of Subop O to the west will allow us to determine if there is a corridor or passageway that connects Plaza B with the Kotanil Courtyard, and a southern exposure will allow us to see if the alignment of stones

found in Subops O and S do in fact form a wall. Excavations along the base of Structure 23 will allow us to search for a plaza floor, and a continuation down to bedrock at the base of the mound will give us a better understanding of the chronological sequence of Plaza B.

STRUCTURE 27

Structure 27 is range structure located in Courtyard D, just southeast of Plaza B. The building measures 20 m in length and is about 4–5 m tall. Structure 27 is oriented north-south and includes a stairway located on the central axis of the mound rising from Courtyard D. The northern end of Structure 27 meets the southern side of Structure 23, and the southern end meets the yet-to-be-investigated Structure 28.

Operation D-1, Suboperations A and B

Because Structure 27 is in Courtyard D, its investigations fell under Operation D-1. Excavation of the structure consisted of two 2 x 2 m units oriented east-west along the stair of the building. These units are denoted as Subops A and B (see Figure 1). These excavations were exploratory in nature.

Observations of Structure 27, prior to excavation, revealed that the stairway appears to have sustained some damage due to collapse and large root systems along the southern and northern portions of the building. Some cut limestone steps remained in place, while some appeared to be displaced across the face of the stairway, making it difficult to determine how many steps comprised the stairway. Based on the surface configuration of the mound, the stairway is approximately nine meters wide.

Excavations at the structure revealed that many of the cut limestone steps seen during the topographical assessment of Subop A do not correspond to those uncovered during our excavations. The steps in the western portion of the unit represented the latest phase of construction remaining in alignment, whereas the steps exposed in the eastern portion of the unit seem to be of an earlier construction phase. The steps in the western half of the unit are made of cut limestone, while the steps in the eastern half of the unit seem to be crudely shaped and covered in eroded plaster or stucco.

The earlier steps at the eastern half of the unit lay directly above a well-preserved plaster floor measuring about 25 cm thick. This plaster floor was heavily eroded beginning 30 cm east of the steps; the line separating preserved floor from eroded floor was so distinct that we thought it might have been an intentional cut (Figure 4). Excavation of the eroded plaster floor revealed that some of the preparation for the floor contains a cemented mix and a loose mix; therefore, the erosion seems to be natural. It is possible that the preserved plaster floor was protected from the elements by the structure itself.

Figure 4. Photograph of Structure 27, Op D-1, Subop A, facing west, after earlier bottom step has been removed and excavations have been conducted through the eroded portion of floor at the eastern end of the unit. Note, this photograph was taken before Subop B was opened to the west.

After the removing the loose and cemented mixed used in the preparation of the floor, fist-sized cobbles were revealed. This deposit of subfloor fill was excavated in hopes of uncovering a dedicatory cache at the base of the structure; however, no cache was found. Beneath the fill, excavators encountered uneven bedrock at 46 cm below the top of the plaster floor at the southeastern corner and 60 cm at the northeastern corner.

The preserved portion of the plaster floor was examined closely and revealed that the steps above the floor were of a later construction phase than the floor, but an earlier phase than the steps exposed in the western half of the unit. Evidence of this is based on the continuation of the plaster floor beneath the exposed steps (Figure 5). Based on this observation, we decided to expose the remaining steps associated with the same construction event.

Excavations continued along the western half of the unit exposing steps similar to those found at the eastern half. These steps were of cut limestone covered in eroded plaster. These steps lay directly beneath the steps associated with the latest phase of construction.

No construction fill was present during our excavation of the latest steps, only eroded plaster, forming an apron like appearance across the face.

Figure 5. Composite photograph of Structure 27, Op D-1, Subops A and B, facing west. These photos were taken several days apart, but show the earlier phase of steps exposed in both suboperations. Note, this photo of Subop A, foreground, was taken before Fig. 4.

Within Subop A, we removed the remaining exposed steps in order to follow the plaster floor to the original construction phase. The plaster floor continued under the steps and no wall was found. The extent of the plaster floor is not known and our unit was expanded to the west with Subop B.

Excavations of Subop B revealed much of the same as Subop A. Excavations exposed the latest phase of construction. These steps exposed correspond to those found at the southwestern portion of Subop A. Like those in Subop A, these steps are directly above a series of heavily cemented steps (Figure 5). After removing both the latest steps and

some of the earlier steps, a structural wall was found along the western wall of the unit. This wall was made of cut limestone blocks and was very different from the heavily cemented steps, suggesting the wall belonged to an earlier phase of construction. Due to time constraints excavations of Subop B were not completed so we were unable to determine if the wall was associated with the plaster floor.

Summary and Conclusions

The exploratory excavations on the stairway of Structure 27 encountered at least two, and possibly three, construction phases. Additional excavations are needed to better define the nature and age of these episodes (all appear to be Tepeu 2–3 at least preliminarily), as well as the function of Structure 27. Future excavations will follow the steps to the summit of the mound and expose the buildings on top, as well as better define the stairway.

EXCAVATIONS AT STRUCTURE 22: THE 2007 FIELD SEASON

James E. Barrera, Texas Tech University

INTRODUCTION

Structure 22 is a long (55 m) range building located along the western side of Plaza B at the site of La Milpa (see Houk, this volume: Figure 1). The 2007 fieldwork conducted by the Texas Tech University Field School in Maya Archaeology focused on the central portion of the eastern face of Structure 22.

Excavations focused on the central stairway on the eastern side of Structure 22. The primary goals of this operation were to identify and define the architecture of the stairway including the horizontal extent of the feature, construction phases represented, and layout of the steps. Other goals were to identify architecture on the top of Structure 22 and to look for a drain on the eastern side of Structure 22 that may have fed the large reservoir immediately west of the building. The results of the 2007 fieldwork defined the northeastern and southeastern corners of this stairway, various phases of construction, the architecture along the central axis from the plaza floor to the top, and structural remains along the top of Structure 22.

SUBOPERATION DESCRIPTIONS

The 2007 excavations at Structure 22 were part of Operation B-1 (Figure 1). Excavations started along the northeastern corner of the central stairway. Subop A was a 2 x 2 m excavation unit that exposed plaza floor and a vertical, cut-stone platform face. Subop E was used to follow the facing south of Subop A. This 2 x 2 m excavation unit exposed a low platform along with an associated higher tier in the western part of Subop E. A final expansion on these features was designated Subop J, a 1 x 2 m excavation unit, that was placed adjacent to the northeastern side of Subop E expanding east. Subop J exposed the northeastern corner of a low platform along with the plaza floor around the platform. Three side-notched arrow points were recovered from the humus in Subops A and J.

Subop I was a 1 x 5 m excavation unit placed along the eastern side of Structure 22, five m north of Subop A. This unit was originally placed to investigate the nature of the basal platform of Structure 22, look for evidence of a plaza floor, and to prospect for a drain at the base of the building. The excavation of Subop I uncovered a series of six steps attributed to the latest phase of construction along the northern section of the range building. As is the case with Structure 23 (see Padilla, this volume), it appears as if steps ran the length of Structure 22. The eastern most 1 x 1 m section of Subop I was excavated down to bedrock 1.15 m below the surface. Fill constituted the majority of the matrix from surface to bedrock, with no clearly identified plaza floor observed. The bottom 30 cm or so of excavations were in gravelly clay, which may represent a buried soil.

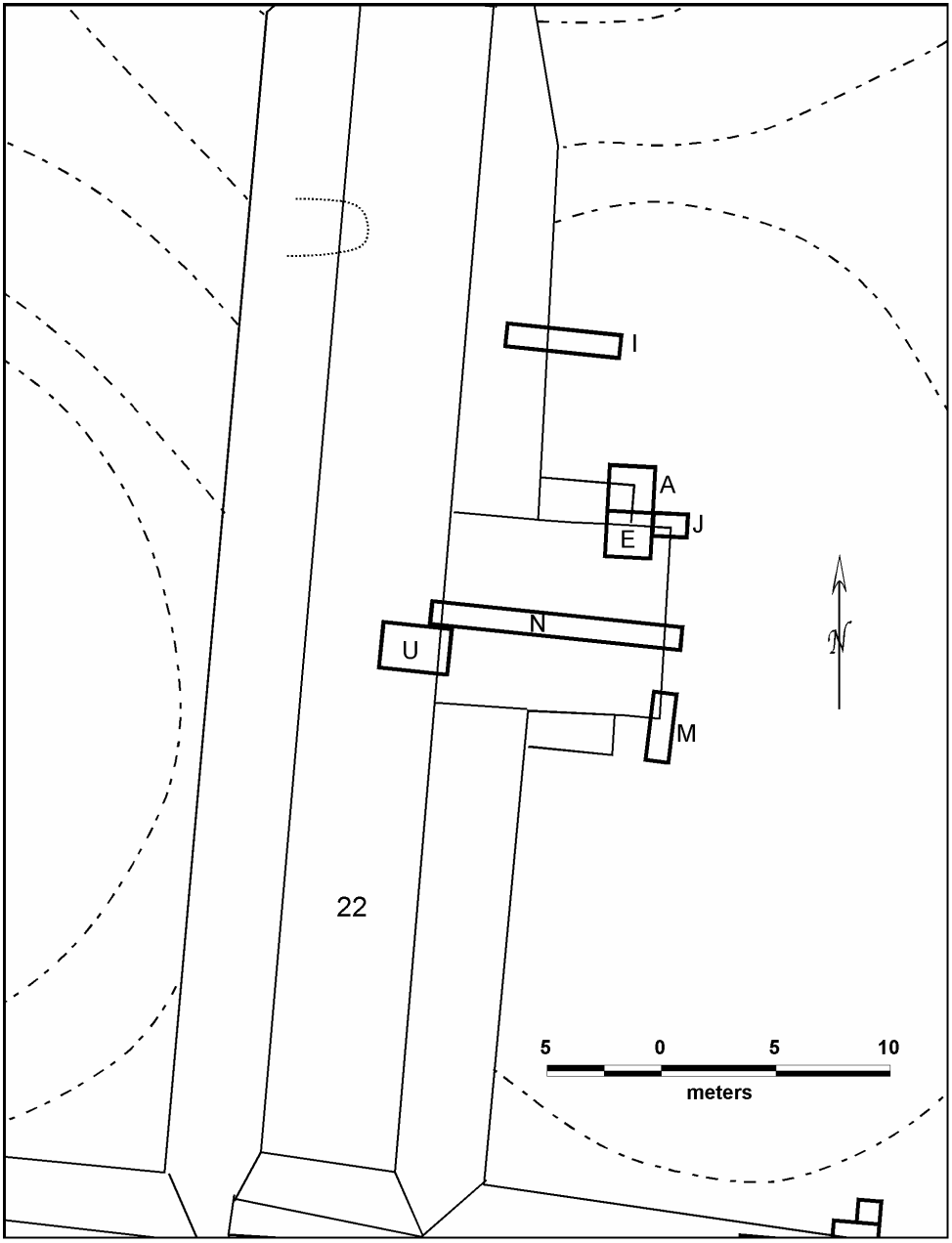

Figure 1. Location of suboperations at Structure 22.

Subop M was opened to determine the width of the central stairway. This 1 x 3 m excavation unit was located 6 m south of the southern side of Subop J. The unit was aligned parallel to Structure 22 in order to define the corner of the central stairway platform and a section of the eastern side. The southeastern corner of the stairway platform along with the plaza floor immediately around the platform was exposed and excavations terminated on these features. At its base, the stairway is 8.4 m wide.

Using the measurement from the northeastern and southeastern corners of the stairway to determine the centerline, a 1 x 11 m excavation unit (Subop N) was placed perpendicular to Structure 22 along the center of the stairway. Subop N extended from the plaza floor in front of Structure 22 to immediately below the top of the structure. Subop N exposed the latest phase of stairs along Structure 22, which was found to be a maintenance phase of construction on earlier stairs directly beneath it. A plastered floor was located in the westernmost 1 x 1 m section of Subop N near the top of Structure 22. Excavations were concentrated in the eastern 1 x 3 m of Subop N to define earlier phases of construction along the center of the stairway, the plaza floor, and to look for caches associated with Structure 22. Beneath the last phase of construction an earlier building (Sub 1) was exposed that was a continuation of the architecture exposed in Subop E. Two steps or levels of Sub1A were exposed in Subop N, with the plaza floor exposed east of the lower step. The lower step of Sub1 was removed exposing a westward continuing plaza floor underneath (Sub 2).

The easternmost 1 x 1 m plaza floor section (Sub 2) of Subop N was removed exposing a cache (Cache B-2) surrounded by subfloor cobble fill. The matrix surrounding Cache B-2 was somewhat different from the surrounding fill and was composed of small gravels and a loose silty-loam. The cache is discussed in more detail below.

Subop U, the last excavation unit opened on Structure 22 during the 2007 season, was placed directly adjacent to the southwestern 1 m section of Subop N. Extending 2 m south and another 2 m west of Subop N, this 2 x 3 m unit was positioned to define the architecture located along the top-center of Structure 22. Excavations uncovered a 1.3 meter wide section of wall that is perpendicular to the central stairway.

INTERPRETATION OF THE ARCHITECTURE

The last phase of construction on Structure 22 appears to be clearly exposed in Subops I and N (Figure 2). In this phase the steps are mostly single course steps with loose silty loam around and underneath the single courses. Most of the stone used was rough-hewn with a few cut stones, and most steps are in a poor state of preservation. Based on excavation in Subop N, the last phase represents an actual construction phase and a subsequent maintenance phase. The steps beneath the maintenance phase are better preserved due to their buried context, but they also appear to be much better made.

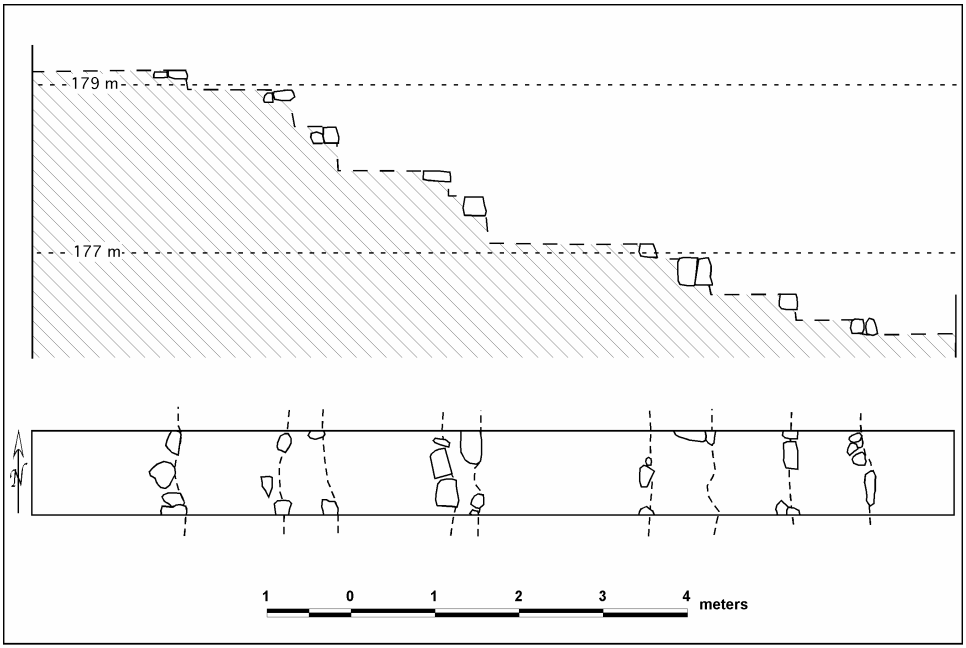

Figure 2. Northern cross-section and plan map of Subop N showing final phase of steps on Structure 22 (field drawing by Debora Trein, Danielle Akers, Kevin Stone, and Michael Henson).

Two other architectural features that are probably associated with this last phase: the vertical platform facing exposed in Subops A and E, and the cut-stone wall exposed in Subop U on the summit of the mound. The Subop A-E facing is clearly a later edition to the thick plastered platform/steps exposed adjacent and to the south in Subop E. The lack of thick plaster and poor condition of the multiple courses of stone making up the face in Subops A and E indicates an association with the final construction phase.

Subop U appears to contain a wall associated with the last phase based on the lack of any architecture above it, the eroded/dislodged condition of the construction material, and the lack of plaster. The excavations documented a plaster floor on the summit of the mound and the partially preserved eastern wall of the building. Subop U appears to have come down on a doorway, exposing the southern doorway jamb. Both the preserved section of the wall and the plaster floor were covered in collapse debris and not completely excavated.

Structure 22 Sub 1 represents the penultimate construction phase; it is separated from the final phase by a thin layer of construction fill. There are also major differences in construction materials and architectural styles used in the two phases (Figure 3). Sub1-B

is exposed in Subop E as a 35 cm high platform with a thick plastered step that rises 60 cm higher to the west (Figure 4). These same features were exposed in the lower (eastern) 1 x 3 m section of Subop N. Sub 1 exposed along Subop N has two maintenance phases (Sub 1-A) directly on top of the original Sub1-B structure. The lower platform of Sub1-B was exposed again in Subop M as a 35 cm high platform. The only excavation removing any Sub 1 architecture occurred in Subop N where both Sub 1-A steps were removed, and the lower portion of the Sub1-B platform was removed exposing the westward continuing plaza floor beneath, which is part of Structure 22 Sub 2.

Figure 3. Photograph of western 5 m of Subop N showing two steps associated with Structure 22 Sub 1A, facing west.

Sub 2 is only represented so far by the plaza floor excavated into in the easternmost 1 x 1 m section of Subop N. Sub 2 was observed continuing westward beneath Sub 1, indicating that Sub 2 is an earlier phase of construction. Sub 2 was exposed in Subops A, E, J, M, and N. It was observed sloping to the north in Subop M, sloping to the west in Subop N, and sloping to the west in Subops A, E, and J. The slope of Sub 2 along the western side of Plaza B is probably related to the proximity of a drain at the base Structure 22. Sub 2 was not clearly exposed in Subop I due to poor preservation or the lack of plastering on that portion of the plaza floor. Excavations into Sub 2 revealed two

Figure 4. Photograph of Structure 22 Sub 1 stair and stair-side in Subops A, E, and J.

replasterings of the plaza floor with a dry cobble fill beneath the thick plastered surface. The dry cobble fill rested on a clay-loam that was not excavated into during 2007. Separately interred into Sub 2 fill was a dense cache (Cache B-2) clearly distinguished by the different matrix of mostly soil that surrounded the cache.

CACHE B-2

A dense cluster of artifacts encountered while excavating in Sub 2 is designated Cache B-2. It consists of obsidian blades, marine shells, coral, one obsidian eccentric, one chert eccentric, two spondylus shell pendant fragments, shell beads, jade beads, unidentified spines (stingray?), and a few ceramic vessel fragments that are not clearly associated (for photographs of selected artifacts from the cache, see Houk [this volume:Figure 3]. This cluster of artifacts was concentrated in the far eastern 1 x 1 m section of Subop N. The cache extends into the south wall of the unit (Figure 5), and was not completed excavated in 2007. The excavated portion measured 20 cm east-east and extended 25 north into Subop N. The maximum thickness of Cache B-2 was 4 cm.

The artifact concentration appears to have been carefully placed as indicated by a pattern detected during the recovery. The obsidian blades were primarily oriented east-to-west

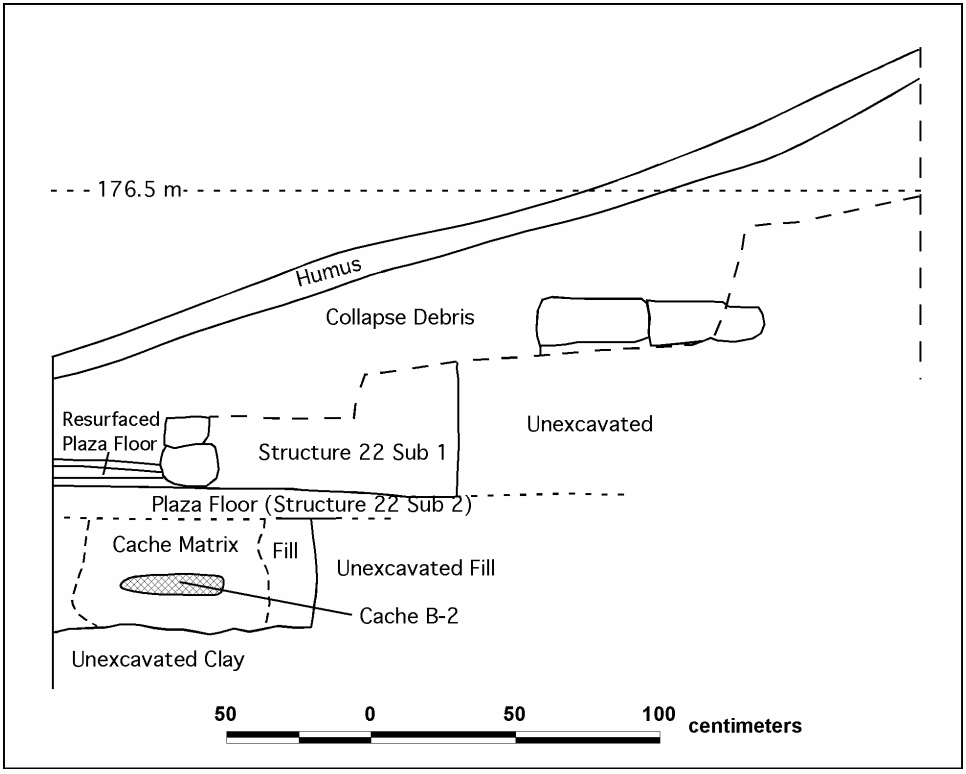

Figure 5. Southern profile of eastern 3-m section of Subop N showing the location of Cache B-2 (field drawing by James Barrera and Doug Rocks-Macqueen).

and concentrated in the northern part of Cache B-2. This dense concentration of obsidian blades was recovered lying in a horizontally layered position, also indicating careful placement. The largest numbers of artifacts recovered from Cache B-2, marine shells, were distributed throughout the cache. These artifacts were observed in a slightly greater concentration towards the southern wall of Subop N, and observed extending into the southern wall. Along the southern wall the two eccentrics were recovered layered one over the other, with the spines and one pointed shell layered beneath the two eccentrics. This carefully placed part of the cache formed a tight cluster of marine shells, eccentrics, and spines along the southern wall of Subop N. The jade and shell beads appear to have come from the northern end of Cache B-2 immediately next to and beneath some of the obsidian blades. All the unmodified marine shell and coral recovered was identified as having extensive wear from water transport, typical of shell-hash deposits found along open coastal shoreline locations. This indicates that all of the unmodified marine artifacts from Cache B-2 were collected from shoreline deposits rather than from underwater.

RECOMMENDATIONS FOR FUTURE RESEARCH AT STRUCTURE 22

At the center of the structure, the completion of Subop U along the top is a priority; this would include removing collapse and defining the wall partially uncovered during 2007. Depending on those results, additional excavations to define the rooms on top of Structure 22 are recommended. Expansion to the south of Subop N in order to recover all of Cache B-2 is recommended, especially since the most carefully place portion of the cache was along the southern wall of the unit. A continued effort to locate a drain along Structure 22 and better understand the sloping plaza floor in relation to this would be very beneficial for understanding water management engineering in Plaza B. And finally, to further investigate the various phases of architecture of Structure 22 through penetrating excavations would help to provide a more complete understanding of the Maya development around Plaza B at La Milpa.

PRELIMINARY COMMENTS FOR COURTYARD 149: THE 2007 FIELD SEASON AT LA MILPA, BELIZE*

Brandon S. Lewis, Santa Monica College
Robyn Dodge, The University of Texas at Austin
Oliver Wigmore, Programme for Belize Archaeological Project

INTRODUCTION

The Programme for Belize Archaeological Project (PfBAP) represents a regional research program aimed at elucidating the nature of Maya political, social, and economic integration. Toward this end, extensive research is being undertaken at the primary center of the region, La Milpa. Our research goals include 1) examining the role of La Milpa in the overarching context of ancient Maya society, 2) identifying the manner in which systems of economy, ideology, and politics articulate at this center, and 3) investigating the role of mid-level residential units within the La Milpa polity.

SPATIAL CONTEXT AND DESCRIPTION

Excavations undertaken in the summer of 2007 by Santa Monica College focused on examining Courtyard 149, located approximately ¼ kilometer southwest of the site's epicenter and directly west of the South Acropolis (Figure 1). Interestingly, this plaza appears to be functionally and socially integrated with two additional courtyards lying immediately to the south. Although little-to-no research has been conducted on the above-mentioned courtyards, a cursory comparison of size, form, and composition indicate that Courtyard 149 likely represents the ranking residential compound of this extended grouping. Courtyard 149 is the largest of the three loci, contains the most formalized architecture, exhibits restricted access and tight nucleation, and contains the sole temple structure. As such, it is proposed that this courtyard housed the ranking elite of this small "lineage".

Courtyard 149 is located atop an artificially modified ridge slope approximately five meters in height. The dimensions of the raised slope measure approximately 12 meters east/west by 25 meters north/south. This locus appears to include a combination of domestic and religious structures. Formalized platforms were constructed on the northern, eastern, and western flanks to support the residential structures, while a three meter tall temple is situated to the south.

EXCAVATION METHODOLOGY

In order to examine courtyard function and the manner in which the individual architectural features articulate, we designed our excavation methodology to sample the various compositional elements of the courtyard. Four functionally distinct loci were identified within this built space: the purported residential structures, the temple, the plaza surface, and associated midden deposits.

Figure 1. La Milpa site center (Tourtellot et al 2003).

Residential Structures
As stated above, the structures atop the northern, eastern, and western platforms were of assumed domestic function. A total of 12 excavation units were strategically placed atop and beside these structures. The initial goal was to verify structure function, define the dimensions of residential space, isolate activities associated within, and identify associated construction phases.

Temple Structure
Situated at the southern terminus of the plaza is a three meter high temple structure. Pre-excavation inspection indicated that the temple had been looted at an earlier date. Extensive erosion and bioturbation have obfuscated clear architectural lines and, in association with the afore-mentioned looting, prohibit investigation atop the structure. Furthermore, it appears that some degree of land modification would have been necessary to articulate the back portion of the temple with the southerly-descending ridge slope. Inspection of the looter's trench indicates a single-phase of construction. With these observations in mind, our goal was to identify structure dimension, expose the outset staircase, and date temple construction. A total of five units were placed along the front face of the temple, the lower slope of the assumed outset staircase, and the area immediately to the west of the structure.

Plaza Surface
The tight nucleation of the four opposing courtyard sides created a well-defined and somewhat sunken plaza surface. Investigation of this feature was undertaken to identify the construction history of the courtyard (as evidenced through superimposed plaza floors) and the extent to which the natural ridge slope may have been artificially expanded. A total of three units were located within the courtyard boundaries.

Associated Midden Deposits
Considering that Courtyard 149 sits atop an elevated ridge, much of the associated midden may exist along the posterior descending slope or level terrain located below. In hopes of identifying activities relating to the individual structures, we examined both the back slope and flat terrain associated with each building. A total of four units were excavated.

SUMMARY OF EXCAVATION RESULTS
Residential Units
Excavation identified and exposed the last occupation surface for the northern courtyard structure and the two structures located along the eastern flank. Data appear to support our preliminary interpretation that these structures functioned as domestic units. Plaster floors and exterior walls were identified in each, along with an interior bench in the northern structure. In addition, artifact recovery is consistent with residential function. While significant evidence of multiple architectural revisions appears to be lacking, the

northeastern structure exhibits an apparent modification and reworking of an earlier entrance way.

Since the initial goals were to determine structure function, architectural design, and the dimensions of usable space, our methodology focused on lateral exposure. No sub-floor excavation was initiated.

Temple Structure

Excavations at this location were difficult. The poor condition of the architecture prevented exact determinations of structure size and composition. Determining the exact dimension of the outset staircase proved exceptionally challenging. It is estimated that staircase width was approximately 3.5 meters east/west. This calculation is based on the preservation of the two lower coursings of the staircase. Analysis of the space immediately adjacent to the west indicates that a slightly raised, flat surface may have been attached to the temple. The tremendous mixture of collapse and fill make this interpretation tenuous. Finally, analysis of temple alignment, along with the Plaza data discussed below, indicate that temple construction may have been the product of a later building phase. The temple appears slightly offset to the east and is not in spatial alignment with the assumed original courtyard structures.

Plaza Data

Excavations throughout the plaza indicate a minimum of two to three resurfacing events. Plaster preservation was exceptionally poor and the only evidence for such surfaces was found in areas directly abutting the northern and eastern platforms. The vertical proximity to one another and their relative thinness suggest a somewhat limited duration of occupation.

Excavation located slightly southwest of the courtyard epicenter identified a successful attempt to enlarge the natural dimensions of the ridge slope. While there is tentative data to suggest expansion to the south, unequivocal evidence attests to east/west courtyard expansion. A series of crude, but substantial, sub-surface retaining walls extend in a westward direction. Based on cursory calculations, as much as 50% of the usable courtyard width was a product of artificial construction.

Midden Data

Midden units located along the descending ridge slopes and level terrain below yielded strikingly different data sets. Units situated at the base of the western and northern structures generated rich recoveries of domestic artifacts. Considerable quantities of ceramics, along with moderate amounts of obsidian and chert were identified. While it is possible that this recovery could represent sub-plaza fill, careful stratigraphic analysis suggests that these artifacts represent primary, contextual trash as opposed to sub-floor fill.

In comparison to the above-noted pattern, excavations at the base of the eastern flank generated little data. While the eastern structures most likely represent residential units, trash disposal patterns appear to vary noticeably for these residents. Analysis of the surrounding space provides a possible explanation for this pattern. The formal dimension of this lower terrain and the fact that the associated courtyard complexes to the south were most likely accessed from this location suggests that this space may have served as a formalized pathway. Such a function may argue against the likelihood of considerable trash accumulation.

***** This paper is a slightly modified version of the report submitted to the Institute of Archaeology, Belmopan, Belize.

EXCAVATIONS IN DEPRESSION A AT LA MILPA EAST (RB LME, OPERATION 1)

Estella Weiss-Krejci, Univeristy of Vienna, Austria

LA MILPA EAST (RB LME): INTRODUCTION

La Milpa East (since 2007 RB LME) was discovered and mapped by Gair Tourtellot in the late 1990s. It is located on the LaMAP (*La Milpa Archaeological Project*) eastern survey transect at 3.5 km east (at approximately E 9500) from the La Milpa center (Figure 1; see also Tourtellot, Everson and Hammond 2003: Figure 9.1; Tourtellot *et al.* 2003: Figure 4.2; *www.bu.edu/lamilpa/linkmap.html*). Previous excavations at La Milpa East have been carried out by Everson in 1998 and 2000 and Weiss-Krejci in 2000 and 2002 (Everson 2003; Hammond *et al.* 2000; Tourtellot, Everson and Hammond 2003; Weiss-Krejci 2000, 2002).

La Milpa East is located on the summit of a steep hill. Its large plaza is surrounded by three range structures in the north, west and south, a smaller structure (Str. 2041) and a temple (Str. 2040) in the east (Figure 2; see also Tourtellot, Everson and Hammond 2003: 98-100, Figure 9.3). All visible architecture dates to the Late/Terminal Classic period (AD 750-850) (Everson 2003; Sagebiel 2003; Tourtellot, Everson and Hammond 2003; Weiss-Krejci 2002). In the second part of the Late Classic, La Milpa East was one of four hilltop centers located on each of the four cardinal points (La Milpa East, La Milpa North, La Milpa South and La Milpa West, Figure 1), all more or less equidistant from the La Milpa center and oriented towards it (Tourtellot *et al.* 2000, 2002).

However, La Milpa East is not the result of a single construction episode. Before being incorporated into the grand cosmological design in the later part of the Late Classic it had its own history. Preliminary evidence for earlier occupation derives from the excavation of a spoil heap, which looters had left behind in the 1980s after tunneling six meters into the back part of the temple (Structure 2040; Op. K23, Weiss-Krejci 2002) (Figure 2). Although there are Late/Terminal Classic sherds in it, the large number of Early Classic sherds makes it likely that part of the building is Early Classic (Sagebiel 2005). More evidence for Early Classic occupation at La Milpa East derives from Depression A.

DEPRESSION A: FORMER INVESTIGATIONS AND 2007 OBJECTIVES

Small depressions are a frequent landscape feature in the northeast Petén and northwestern Belize and have been primarily considered the remains of seasonal ancient Maya water cisterns (Scarborough and Gallopin 1991). Depression A, also known as Depression 9, is one of 17 small depressions, which were systematically investigated (by the author of this report), between 1997 and 2002. The systematic investigation has shown that depressions may have not only served as ancient water cisterns, but for a variety of other purposes: they might constitute the remains of collapsed *chultuns*, rock

quarries and clay mines, areas where household activities were carried out and they could have played a role as gardens and trash dumps (Weiss-Krejci 2004; Weiss-Krejci and Sabbas 2002).

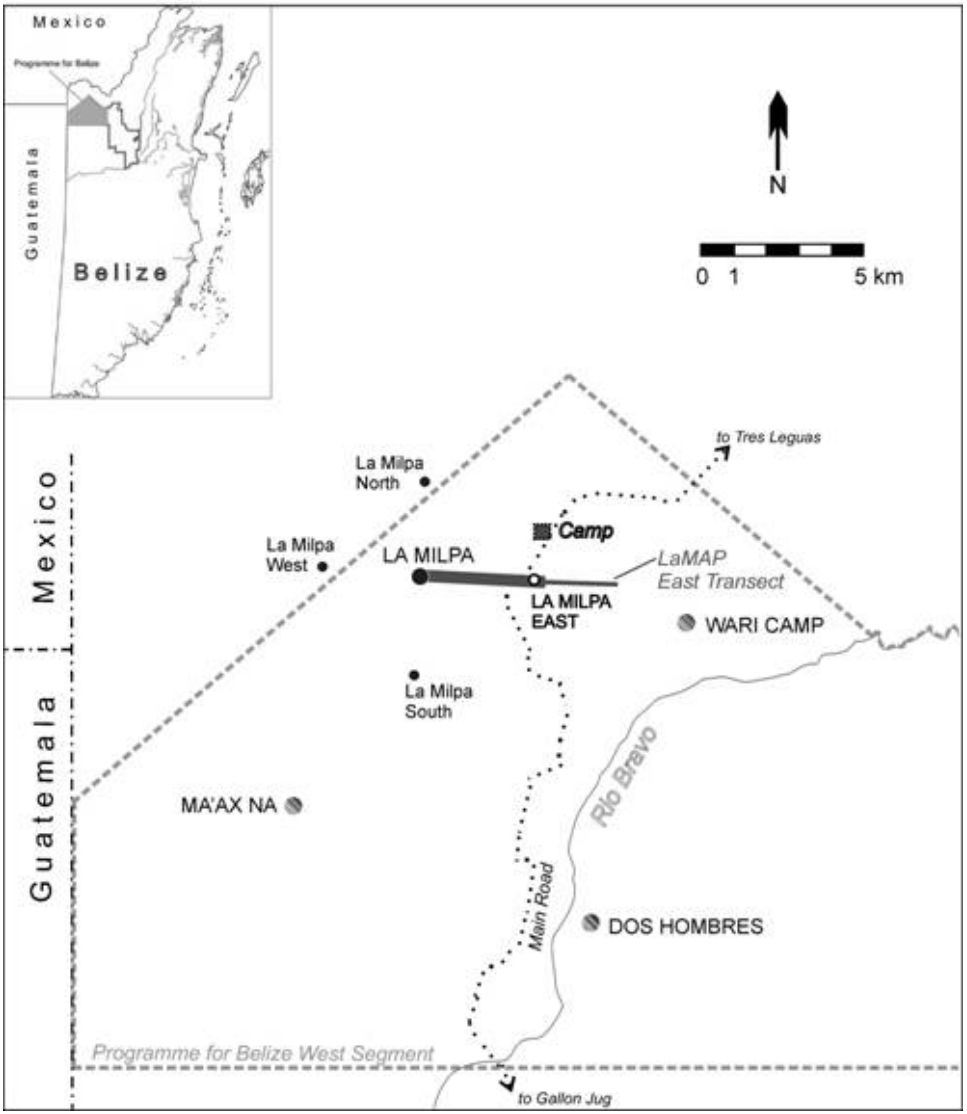

Figure 1: Location of La Milpa East

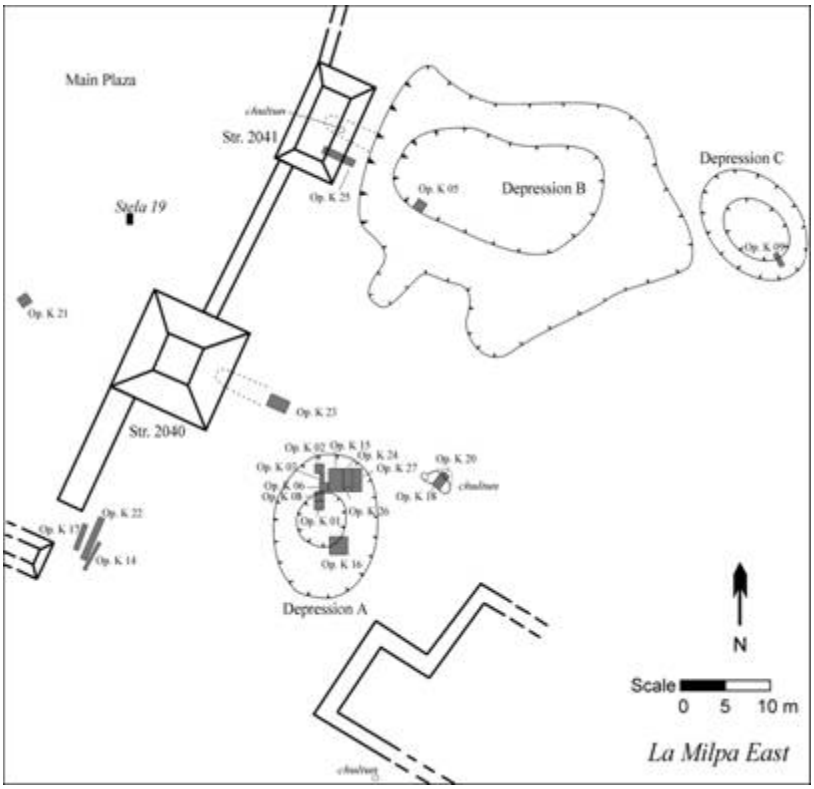

Figure 2: LME, eastern part, previous K-Operations and location of Depression A

Depression A is located 15 meters southeast of Structure 2040, the La Milpa East temple building (Figure 2). Several test pits dug in 2000 (Ops. K01, K02, K03, K06, K08) and 2002 (Ops. K15, K16, K24, K26, K27) have revealed its multi-stage history (Figure 3). After being quarried, Depression A first served as a reservoir. Its earliest stratum (K0110, K0813, K1510, see Figure 4) consists of a thick gray hard layer, which was interpreted as the remains of an ancient water cistern, similar to the one Trachman found in a reservoir at Dos Hombres (Trachman 2007). The ceramics which were encountered in this bottom stratum and the one above it (K0109, K0811, K1509 and K1610) date to the Early Classic (Sagebiel 2005). The sherds from both layers are gray, water stained and rounded, and probably represent early slope wash and trash during the time Depression A was used as a cistern. The next layer (K0108, K0810, K1507, K1609) dates predominantly to the first part of the Late Classic (Sagebiel 2005). The layers above date to the late Late Classic, when the depression was filled with gravel and a large number of sherds probably to be used as a plot for sheltered cultivation (Weiss-Krejci and Sabbas 2002: 351-352). The lower zone of the late Late Classic "garden" gravel stratum (K0106/0107,

K 0808, K1505/1506, and K1606/1607) is about 20 cm thick and consists of 2 to 10 cm diameter limestone pieces and large, nicely preserved sherds. Above there is a ca. 10 cm thick layer that consists of a large amount of smaller sherds and small limestone pieces (1 to 2 cm in diameter) (K0105, K0804, K1504, K1605). The entire gravel and sherd layer (calculated for the entire Depression A) probably contains around 200,000 ceramic sherds weighing between 1,000 and 3,000 kg. The gravel deposit is covered by three more layers: half a meter of light soil that contained sherds and limestone in lower quantities (K0104, K0803, K1503, K1604), and two top post-abandonment layers (Figure 4; Weiss-Krejci 2004; Weiss-Krejci and Sabbas 2002).

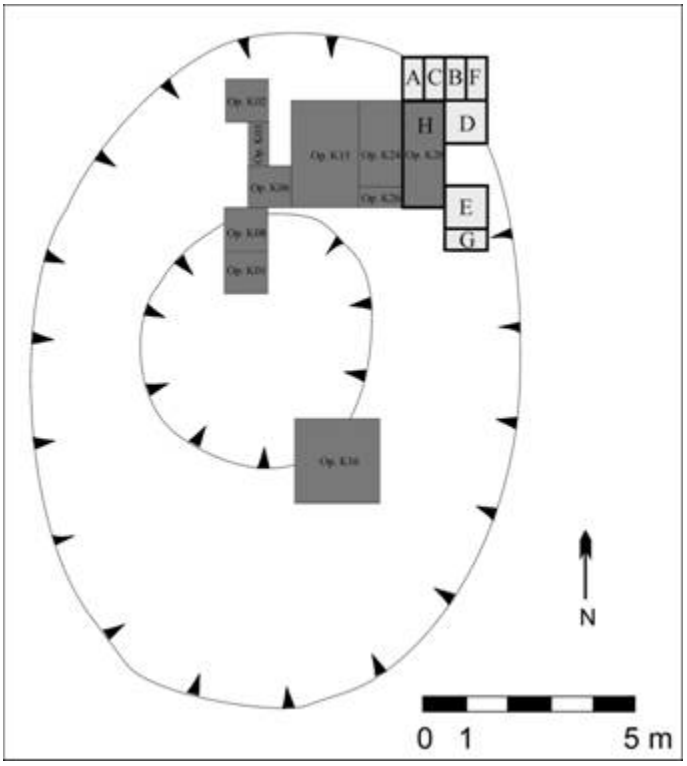

Figure 3: Depression A: 2000/2002 (dark grey) and 2007 (light) excavation

In 2002 Weiss-Krejci excavated the northern rim of Depression A where a slight rise in the terrain was noticed although no architecture was visible. After removing the topsoil, a cobble structure (Feature 2) appeared at approx. 30 cm below the surface. The eastern part of this structure looked as if it belonged to a circular or apsidal platform (Weiss-Krejci 2002). Unfortunately, Feature 2 could not be sufficiently exposed nor excavated because the discovery was made only a few days before the end of the 2002 field season.

The main goal of the 2007 season (Operation 1) was to further explore Feature 2 and determine its extent and shape, construction date and stratigraphic relationship with the other depression layers.

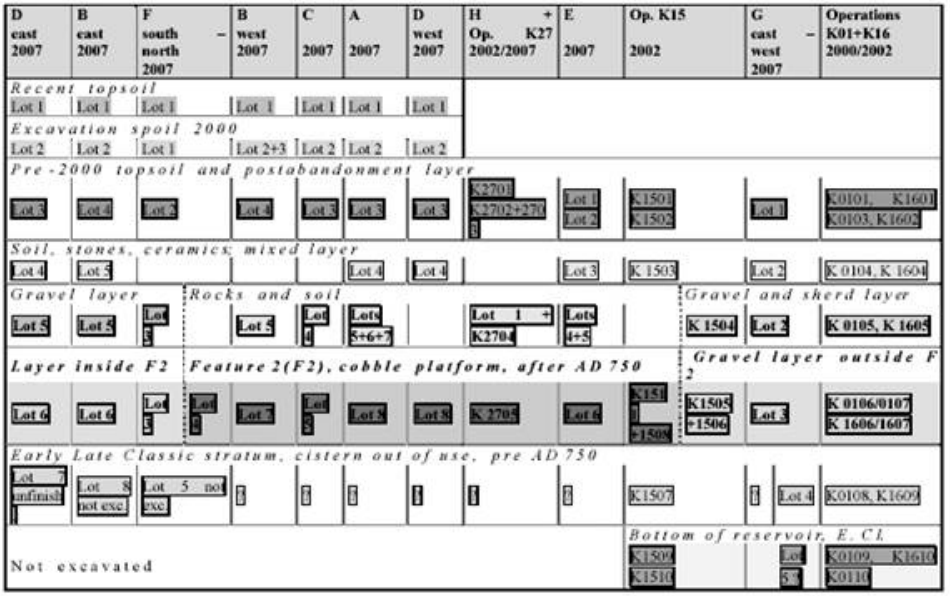

Figure 4. Stratigraphic matrix for depression.

2007 OPERATION 1 METHODS AND RESULTS: SUBOPS. A, B, C, D, E, F, G, and H

Since all excavation units in Depression A had been backfilled in 2002, it was necessary to uncover the eastern part of the old excavation. We took out the refilled soil from 2002 Operation K27, a 2.5 x 1 m unit. Then we opened seven test pits, Suboperations A, B, C, D, E, F, and G (Figure 3 and Appendix 1). We also cleaned the top of the exposed Op. K27. Collected materials from this unit were catalogued as Subop. H. In 2000 the northern depression rim had been used for dumping partially unscreened excavation spoil; we therefore had to excavate through this layer and remove recent topsoil accumulations before reaching the original topsoil layer. This explains why the original topsoil in Subops. A, B, C, D, and F only commences with Lots 3 or 4 (Figure 4 and Appendix 2).

Suboperations A, B, C. D, E, and F were taken down to the surface of Feature 2. The inside part of Feature 2 (= Subop. F south and D east) did not contain large cobbles, but was characterized by a grayish gravel layer and an accumulation of large sherds and small limestone rocks (Figures 5, 6 and 7). Especially Lot B-6 resembled Feature 1 in

Figure 5. View of Feature 2 from the South (Photo 4705).

Operation K08 (2000) and layers K 0106/0107 and K0808. Suboperation G, which lies outside Feature 2 was excavated a little further down on its western side (50 x 50 cm, see Figures 7 and 8). In Lot G-4 (Figure 9), which predates Feature 2 and is associated with the earlier cistern deposit, an unmodified jute shell (possibly *Pachychilus indiorum*) was encountered (Figure 10). Such freshwater snails do not live in ponds, but prefer fast

moving streams and rivers. However, jute is often ritually deposited in sacred and watery places (Halperin *et al.* 2003).

At the southwestern end of Subop. G we found bedrock at 160 cm below datum (see Figures 6 and 19, southwest corner) whereas the soil layer at the northwestern end of Subop. G reached much deeper (Figures 7 and 9).

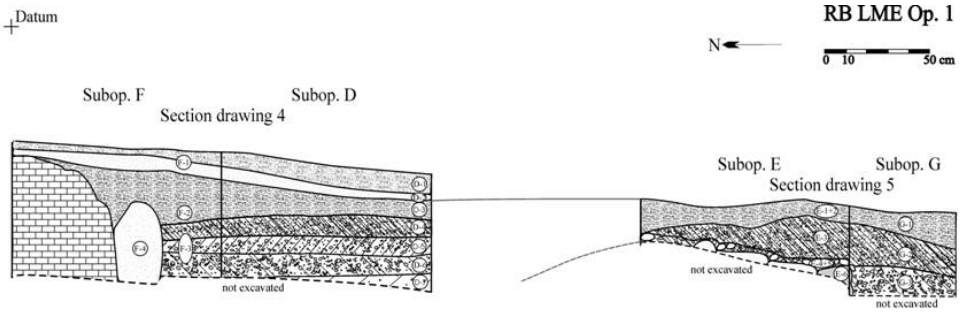

Figure 6. East section Subops. F, D (Section drawing 4), E and G (Section drawing 5).

We screened everything and collected ceramics, chert, obsidian, and other small finds (Appendix 3). Terrestrial snails (in total 955: 890 *Neocyclotus dysoni*, 12 *Euglandina cylindracea*, 24 *Choanopoma* sp., 2 *Orthalicus princeps* and 27 unidentified) were classified and counted, but not collected; the same applies to burnt limestone which was counted and weighed (Appendix 3). All details concerning the 2007 suboperations, lot characteristics and artifacts can be found in Appendices 1, 2, and 3. Photos of special finds, which among others include one eccentric flint, a small shell mosaic ornament, fire cracked chert and the complete jute snail have been included in this report (see Figures 10 to 16).

Unfortunately no unit could be entirely finished and more excavations will be needed. The 2007 excavations clearly demonstrate that Feature 2 was built in the depression and not - as at some point suggested - on top of the depression rim. It is also evident that Feature 2 is not circular but an apsidal structure. It could represent the remains of a platform or even a wall. The stones which were used for its construction consisted both of chert or much softer limestone. The structure fill contained a high amount of broken chert, which had been exposed to high temperatures (David Hyde personal communication, 2007). Stratigraphically Feature 2 was built on top of the early Late Classic layer (Op. K0108, K0810, K1507, K1609, Figure 4) and is contemporaneous with the late Late Classic "garden" gravel layer (Op. K0106/0107, Op. K 0808, K1505/1506, Op. K1606/1607, Figure 4). However, it is not yet possible to determine its real shape and function.

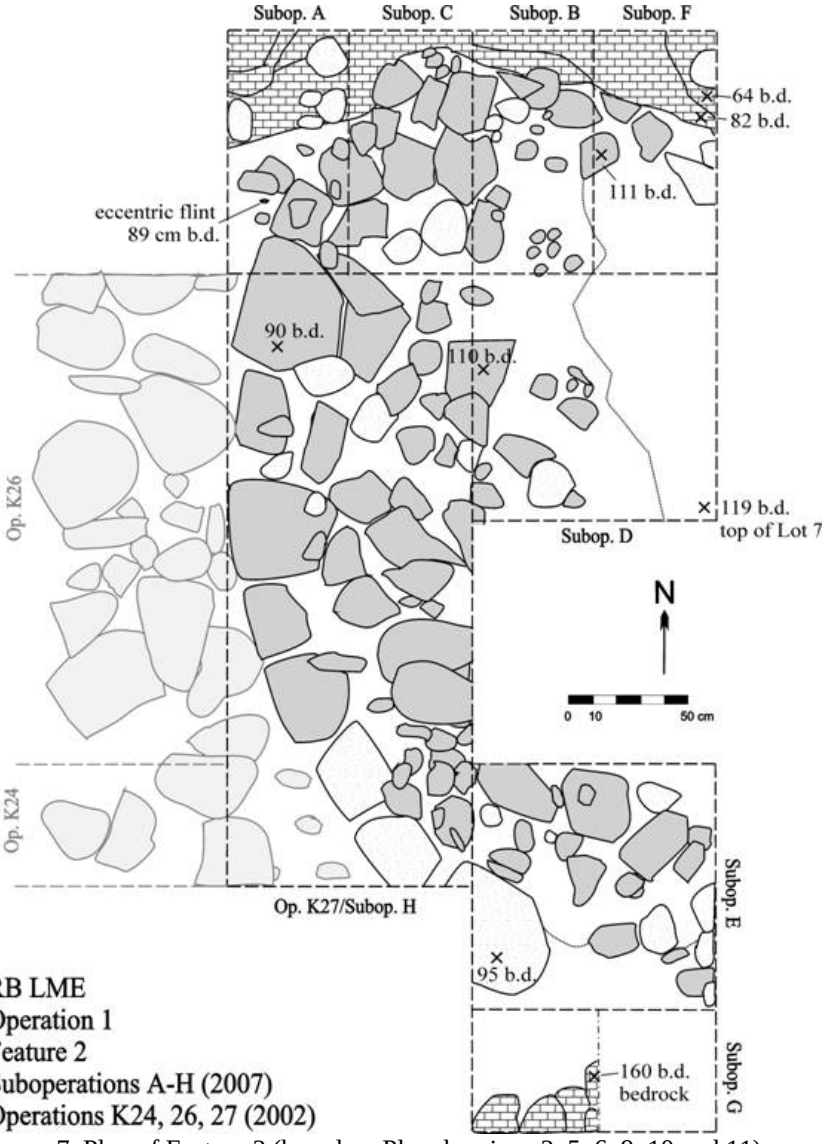

Figure 7. Plan of Feature 2 (based on Plan drawings 2, 5, 6, 9, 10 and 11).

Figure 8. Subops. E (left) and G (right) from the West (Photo 4661).

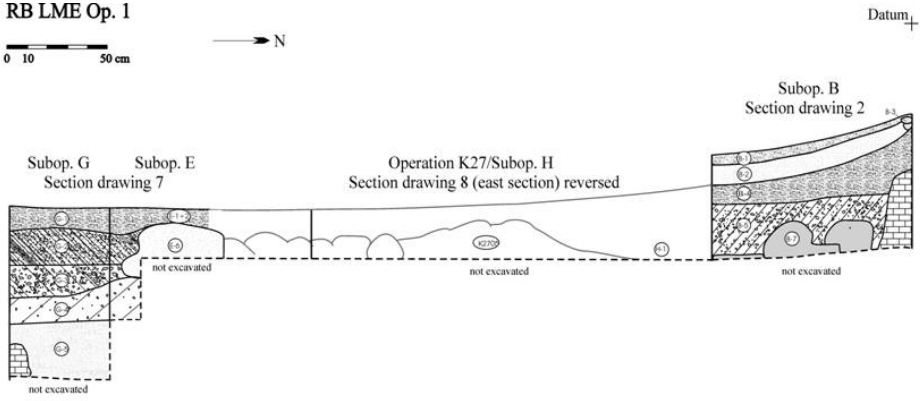

Figure 9. West section Subops. B (Section drawing 2), E and G (Section drawing 7).

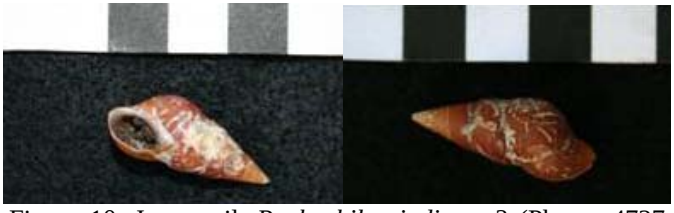

Figure 10. Jute snail, *Pachychilus indiorum*? (Photos 4727 and 4728): Lot G-4, June 1.

Figure 11. Obsidian blades (Photo 4576): left: Lot A-1, June 10; right: Lot A-2, June 11.

Figure 12. Left: Sherd (approx. 2 cm) with red ochre (Photo 4443): Lot A-3, June 11; Right: Fire cracked chert (Photo 4732): Lot E-5, June 17.

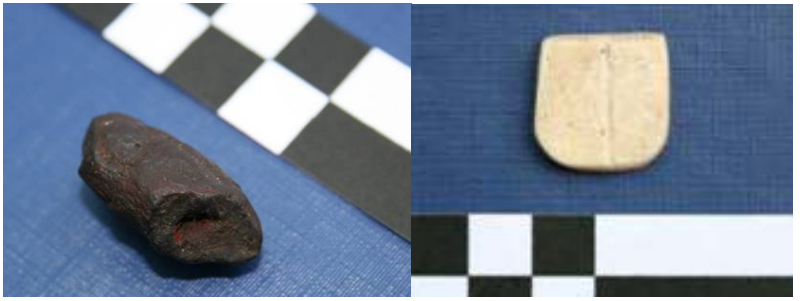

Figure 13. Left: Small reddish stone (Photo 4584), exposed to heat ?: Lot E-1, June 16; Right: Shell ornament (Photo 4563): Lot C-4, June 15.

Figure 14. Two views of Eccentric flint (Photos 4435 and 4438): Lot A-6, June 11.

Figure 15. Limestone tool (Photo 4450): Lot B-2, June 12.

ACKNOWLEDEMENTS

The 2007 work was performed under permits extended to Fred Valdez Jr. for the Programme for Belize Archaeological Project. I would like to thank the Belize Institute of Archaeology for permitting these studies and Fred Valdez Jr. for inviting me to work at La Milpa East. I also would like to thank the following people: Laura Levi, Lauren Sullivan and David Hyde for their scientific expertise; students and volunteers who helped with the excavation: Aindrea Dunn, Steve Hopkins, Robyn Dodge, Patrick Annesty and our two workmen Rosendo Murío and Ramón Guerra.

Appendix A: Suboperations, RB LME Operation 1, 2007 (see Figure 3 for exact location)

Suboperation	No. of excavated lots	Comments	Opened	Closed	Unit Size	Section drawings	Plan drawings	Photos
Subop. A	7	Lot 8 not excavated	June 10 2007	June 16 2007	0.5 x 1 m	East profile (Section drawing 1)	Lot 5, Lot 8 (Plan drawings 1,2 and 11)	4390, 4397 4402, 4678, 4699
Subop. B	6	Lot 7 not excavated	June 12 2007	June 16 2007	0.5 x 1 m	West profile (Section drawing 2)	Lot 3, Lot 6, Lot 7, bedrock (Plan drawings 3,4,5,6 and 11)	4400, 4408, 4608, 4656
Subop. C	4	Upper lots disturbed by Escoba; Lot 5 not excavated	June 14 2007	June 15 2007	0.5 x 1 m		Lot 5 (Plan drawing 7 and 11)	4557
Subop. D	7	Lot 7 partially excavated, Lot 8 not excavated	June 14 2007	June 16 2007	1 x 1 m	South profile (Section drawing 3), East profile (section drawing 4)	Lot 2 (Plan drawing 8 and 11)	4656, 4718, 4631
Subop. E	5	Lot 6 not excavated	June 16 2007	June 17 2007	1 x 1 m	East profile (Section drawing 5)	Lot 4 (Plan drawing 9 and 11)	4593, 4668
Subop. F	4	Lot 4 partially removed, Lot 5 not excavated	June 16 2007	June 17 2007	0.5 x 1 m	East profile (section drawing 4)	Lot 3 (Plan drawing 10 and 11)	4599, 4632
Subop. G	5	Lots 4 and 5 incompletely excavated	June 17 2007	June 18 2007	0.5 x 1 m	East profile (Section drawing 5), South profile (Section drawing 6), West profile (Section drawing 7)	Plan drawing 11	4661
Subop. H	1	cleaning on top of Op. K 27	June 17 2007	June 18 2007	Op. K 26 (2002), 2.5 x 1 m	East profile (Section drawing 8)	Plan drawing 11	4675, 4705

Appendix B: Lot descriptions, RB LME Operation 1, 2007

Subop.	Lot	Date opened	Date closed	Description	Interpretation	Excavators
Subop. A	**Lot 1**	10-Jun	10-Jun	brown soil	recent topsoil	Weiss-Krejci/Levi
Subop. A	**Lot 2**	11-Jun	11-Jun	soil with small limestone	excavation spoil	Weiss-Krejci/ Dunn
Subop. A	**Lot 3**	11-Jun	11-Jun	brown soil, less limestone	pre 2000 topsoil	Weiss-Krejci/ Dunn
Subop. A	**Lot 4**	11-Jun	11-Jun	brown soil	soil above Feature 2	Weiss-Krejci/ Dunn
Subop. A	**Lot 5**	11-Jun	11-Jun	smaller rocks	Feature 2 covered	Weiss-Krejci/ Dunn

Subop. A	**Lot 6**	11-Jun	11-Jun	soil below rocks/eccentric	soil which sifted in	Weiss-Krejci/ Dunn
Subop. A	**Lot 7**	16-Jun	16-Jun	soil and stones	soil which sifted in	Hopkins
Subop. A	**Lot 8/ not exc.**	16-Jun	16-Jun	large rocks	Feature 2, outer edge	
Subop. B	**Lot 1**	12-Jun	12-Jun	brown soil	recent topsoil	Weiss-Krejci/ Dunn
Subop. B	**Lot 2**	12-Jun	12-Jun	soil with small limestone	excavation spoil	Weiss-Krejci/Dunn
Subop. B	**Lot 3**	12-Jun	12-Jun	rocks and soil	excavation spoil	Weiss-Krejci/ Dunn
Subop. B	**Lot 4**	12-Jun	12-Jun	brown soil, less limestone	pre 2000 topsoil	Weiss-Krejci/ Dunn
Subop. B	**Lot 5**	12-Jun	12-Jun	brown soil, small limestone	soil/stones above Feature 2	Weiss-Krejci/ Dunn
Subop. B	**Lot 6**	16-Jun	16-Jun	grayish soil plus limestone	fill layer inside Feature 2	Hopkins
Subop. B	**Lot 7/ not exc.**	16-Jun	16-Jun	rocks, west part	Feature 2	
Subop. B	**Lot 8/ not exc.**	16-Jun	16-Jun	gray layer below Lot 6	layer below fill layer	
Subop. C	**Lot 1**	14-Jun	14-Jun	brown soil	recent topsoil	Weiss-Krejci/ Dunn
Subop. C	**Lot 2**	14-Jun	14-Jun	soil with limestone	excavation spoil	Weiss-Krejci/ Dunn
Subop. C	**Lot 3**	14-Jun	14-Jun	brown soil	pre 2000 topsoil	Weiss-Krejci/ Dunn
Subop. C	**Lot 4**	14-Jun	15-Jun	brown soil plus rocks	soil and stones above Feature 2	Dunn/ Hopkins
Subop. C	**Lot 5/ not exc.**	14-Jun	15-Jun	rocks	Feature 2	
Subop. D	**Lot 1**	14-Jun	14-Jun	brown soil	recent topsoil	Guerra/Murío
Subop. D	**Lot 2**	14-Jun	14-Jun	soil with small limestone	excavation spoil	Guerra/Murío
Subop. D	**Lot 3**	14-Jun	14-Jun	dark soil, less limestone	pre 2000 topsoil	Guerra/Murío

Subop. D	**Lot 4**	14-Jun	15-Jun	soil with large sherds, small limestone	soil/stones above Lot 5	Dodge
Subop. D	**Lot 5**	15-Jun	15-Jun	soil w/ limestone (1-3cm)	layer inside Feature 2	Dodge
Subop. D	**Lot 6**	15-Jun	16-Jun	grayish soil plus limestone	layer inside Feature 2	Dodge/ Annesty
Subop. D	**Lot 7/ not finished**	16-Jun	16-Jun	gray, plasterlike sterile layer	plastered floor?	Annesty
Subop. D	**Lot 8/ not exc.**	16-Jun	16-Jun	rocks	structure	
Subop. E	**Lot 1**	16-Jun	16-Jun	topsoil	topsoil	Dunn/ Annesty
Subop. E	**Lot 2**	16-Jun	16-Jun	soil and limestone	soil and stones above Feature 2	Dunn/ Annesty
Subop. E	**Lot 3**	17-Jun	17-Jun	dark brown soil above rocks	soil above Feature 2	Dunn
Subop. E	**Lot 4**	17-Jun	17-Jun	rocks	Feature 2, upper part	Dunn
Subop. E	**Lot 5**	17-Jun	17-Jun	dark brown soil, limestone	soil between stones	Dunn
Subop. E	**Lot 6/ not exc.**	17-Jun	17-Jun	rocks	Feature 2	
Subop. F	**Lot 1**	16-Jun	16-Jun	brown soil	recent topsoil + spoil	Hopkins
Subop. F	**Lot 2**	17-Jun	17-Jun	dark soil	pre 2000 topsoil	Hopkins/ Weiss-Krejci
Subop. F	**Lot 3**	17-Jun	17-Jun	light to grey soil, limestone	several layers inside Feature 2 (mixed lot)	Hopkins
Subop. F	**Lot 4**	17-Jun	17-Jun	limestone boulder and rocks	part of Feature 2	Hopkins
Subop. F	**Lot 5/ not exc.**	17-Jun	17-Jun	gray soil	soil below structure and below gravel	
Subop. G	**Lot 1**	17-Jun	17-Jun	brown soil	topsoil	Guerra/Murío
Subop. G	**Lot 2**	17-Jun	17-Jun	very dark soil, some limestone	soil and limestone	Guerra/Murío

Subop. G	**Lot 3**	17-Jun	17-Jun	soil, limestone and sherds	gravel layer	Guerra/Murío
Subop. G	**Lot 4**	18-Jun	18-Jun	gray soil (partially exc.)	grey soil	Hopkins
Subop. G	**Lot 5**	18-Jun	18-Jun	gray sterile layer (part. exc.)	water layer ?	Hopkins
Subop. H	**Lot 1/ not finished**	17-Jun	18-Jun	soil between rocks	top of Feature 2 (Op. K 27)	Annesty

Appendix C: List of Finds, RB LME Operation 1, 2007

Subop. – Lot	Sherd no.	Weight (g)	Chert no.	Weight (g)	Obsidian no.	Burnt limestone	Weight (g)	Land snails no.	Other	Special finds photos
A-1	16	93,5	3	52	1	1	18	2	0	obsidian, photo 4576 (Fig. 7)
A-2	42	154	12	296	1	25	166	56	0	obsidian, photo 4576, (Fig. 7)
A-3	8	10	3	6	0	0	0	42	0	sherd with ochre, photo 4443 (Fig. 8)
A-4	19	54	3	78	0	1	2	28	0	
A-6	26	79	4	20	0	3	5	2	eccentric flint	eccentric flint, photos 4435, 4438 (Figs. 9,10)
A-7	7	39	5	167	0	14	35	16	0	
B-1	42	87	14	268	0	6	9	2	0	
B-2	27	90	10	246	0	6	35	50	1 limestone tool	limestone tool, photo 4450 (Fig. 11)
B-4	44	66	9	41	0	0	0	105	0	
B-5	69	142	15	227	0	21	129	37	0	
B-6	3	22	4	15,5	0	11	32	1	0	
C-1	21	38	8	58	0	6	23	7	0	
C-2	35	87	10	206	0	3	6	38	0	
C-3	55	139	17	84	0	12	166	137	0	
C-4	43	106	18	32	0	23	111	17	shell ornament	shell ornament, photo 4563 (Fig. 12)
D-1	9	37	9	258	0	7	113	4	0	
D-3	109	341	31	162	0	10	113	33	0	
D-4	100	?	14	51	0	36	120	10	0	
D-5	46	13	30	437	0	43	250	2	0	
D-6	3	1	1	17	0	9	20	2	0	
E-1	113	314	36	371	0	102	279	78	small red stone	small stone, photo 4584 (Fig. 13)
E-2	46	111	11	69	0	13	58	17	0	
E-3	56	100	12	185	0	17	56	91	0	
E-5	125	286	18	107	1	28	149	6	chert not collected	fire cracked chert, photo 4732 (Fig. 14)
F-1	10	39	5	187	0	1	4	21	0	
F-2	34	151	8	44	0	4	8	91	0	
F-3	58	242	34	321	0	27	103	23	0	
G-1	32	46	7	26	0	13	36	26	0	
G-2	188	564	35	348	0	24	113	11	0	
G-3	61	142	16	134	0	11	66	0	0	
G-4	68	147	5	35	0	11	22	0	1 Pachychilus sp.	jute snail, photos 4727, 4728 (Figs. 15, 16)
G-5	0	0	0	0	0	0	0	0	0	
H-1	6	31	2	648	0	1	2	0	0	

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EXCAVATIONS AT GROUP A OF THE MEDICINAL TRAIL SITE: RESULTS FROM THE 2007 INVESTIGATIONS

David M. Hyde, The University of Texas at Austin
Kirsten Atwood, The University of Texas at Austin

INTRODUCTION

Over the past four years excavations at the Medicinal Trail Site's Group A have focused on identifying the occupation history, site function, and the socio-economic and ritual relationship between its occupants and those in the rest of the community (Grazioso 2007; Hyde 2005; Hyde et al 2006; Hyde and Atwood 2007; Hyde and Martinez 2007; Hyde and Valdez 2007). The Medicinal Trail Site is a dispersed hinterland community of a few formal courtyard groups, numerous informal clusters of mounds and multiple landscape modifications such as terraces, depressions, and linear features. It is located in the Belize portion of the Three Rivers Region (Adams et al. 2004) in the Rio Bravo Conservation and Management Area, owned and operated by the Programme for Belize (PfB) and is approximately 6 to 8 km east of the major site of La Milpa (Figure 1). The site is located between the La Lucha uplands and the Rio Bravo Escarpment atop a ridge, and best characterized as a terraced community (Scarborough and Valdez 2003). The site extends from the escarpment to the east and the Turtle Pond to the west, located in the PfB's La Milpa Research Station facility. To date, not enough survey has been undertaken to determine a northern and southern boundary for the Medicinal Trail community.

The first excavations at the site were conducted in 2002 and consisted of two separate studies. Laura Ferries (2002) investigated a small informal group of mounds (Operation 5), while Danica Farnand (2002) excavated a series of terraces (Operation 6) that cross PfB's tourist trail (named Medicinal Trail), from which the site gets its name. In the spring of 2004 excavations began at Group A (Operation 7), a formal courtyard group, by David Hyde (Hyde 2005, Hyde et al 2006; Hyde and Atwood 2007; Hyde and Martinez 2007; Hyde and Valdez 2007). In the summer of the same year, excavations were undertaken at the Turtle Pond (Op. 8), a seasonally inundated depression at the base of a slope on the western edge of the site (Chmilar 2005). Additional work was undertaken at Medicinal Trail (also Op. 7) in 2006 by George Rodriguez (2007), Jeff Brewer's (2007) investigations were Operation 10, and Jason Whitaker (2007) supervised Operation 11.

In 2007, Hyde, Rodriguez, and Whitaker returned to Group A. Investigations at Group B (Operation 12) were begun by Lauri Thompson and Deanna Riddick. Maia Deddrick and Madelyn Percy undertook limited preliminary work at Group C (Operation 13), a small group south of Group B and a nearby associated depression (Operation 14). See this volume for reports on the activities of the work conducted by the above mentioned.

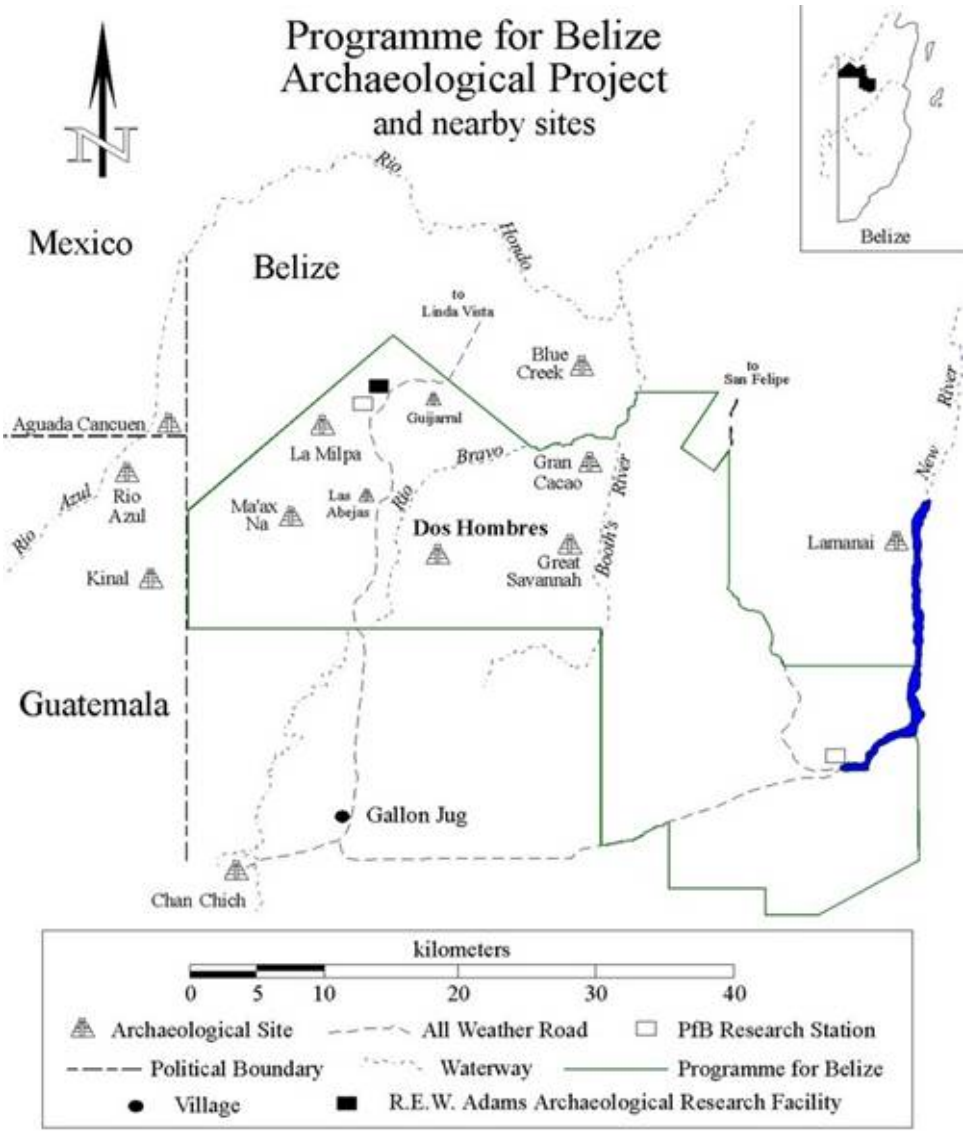

Figure 1. Map of the Three Rivers Region (Courtesy of the PfBAP).

Survey and excavation data from the eastern La Milpa periphery indicate there is considerable variability in settlement size and occupation history through the community (Everson 2003; Farnand 2002; Ferries 2002; Hughbanks 2005; Hyde and Valdez 2007; Jesperson-Tovar 1996; Lewis 1995; Muñoz 1997; Robichaux 1995; Weiss-Krejci, this volume). Small mounds surrounding shared courtyards and informal clusters of mounds

are numerous and most are presumed to be residential. Woven throughout these mounds are innumerable linear berms (likely for erosion control and/or water management), terraces (presumably for agriculture), depressions (possible reservoirs), and other landscape modifications.

Group A was located by a survey team from the Programme for Belize Archaeological Project in early 2004, with excavations beginning shortly thereafter and continuing in 2005, 2006 and 2007. The group is situated on a ridgetop and consists of six mounds distributed around three contiguous courtyards aligned on a north-south axis and one additional mound to the north (Figure 2). At least four depressions have been identified on the periphery around Group A (Brewer 2007; Me-Bar 2005), and there are many terraces (Farnand 2002; Hyde and Fischbeck 2007) extending across the slopes moving away from the site center towards the Turtle Pond to the west, and towards the escarpment to the east. Ceramics recovered from Group A indicate an occupation from at least the Late Preclassic through the Terminal Classic, with a possible Middle Preclassic presence (Lauren Sullivan, personal communication 2005). The residents of Group A were part of the non-elite commoner population in the hinterland to the east of La Milpa and likely represent an extended family.

EXCAVATIONS ON THE PERIPHERY OF GROUP A

Extensive excavations in the 2004 and 2005 seasons indicate that landscape immediately surrounding Group A has been artificially modified to create an essentially level space (Hyde 2005; Figure 3). At some point in the past, likely during the Late Preclassic, the area was stripped of sediment down to bedrock, which slopes downward from north to south, and then fill material, or in some cases redeposited midden, was laid on this exposed surface creating a level surface. A compact earthen prepared surface was placed over the fill, extending from the structures out across this area.

Survey and reconnaissance data have shown there are numerous terraces on the slopes leading away from Group A (Hyde and Valdez 2007). Danica Farnand (2002) excavated four terrace features along the tourist trail portion of the site. Additional terrace excavations took place one-half kilometer west of Group A in the 2005 field season (Hyde and Fischbeck 2007). Construction techniques were similar at both locations with terrace walls consisting of two rows of large stones with smaller cobbles between them (Figure 4). The preserved portion of the wall on the terrace west of Group A is approximately 80 cm tall and 80 cm thick. Additional large stones down slope from the terrace wall suggest that the original wall was taller, but has since collapsed. A high percentage of lithic debitage was recovered behind, within, and in front of the terrace wall and likely functioned to enhance drainage of the clayey terrace soils (Healy et al. 1983).

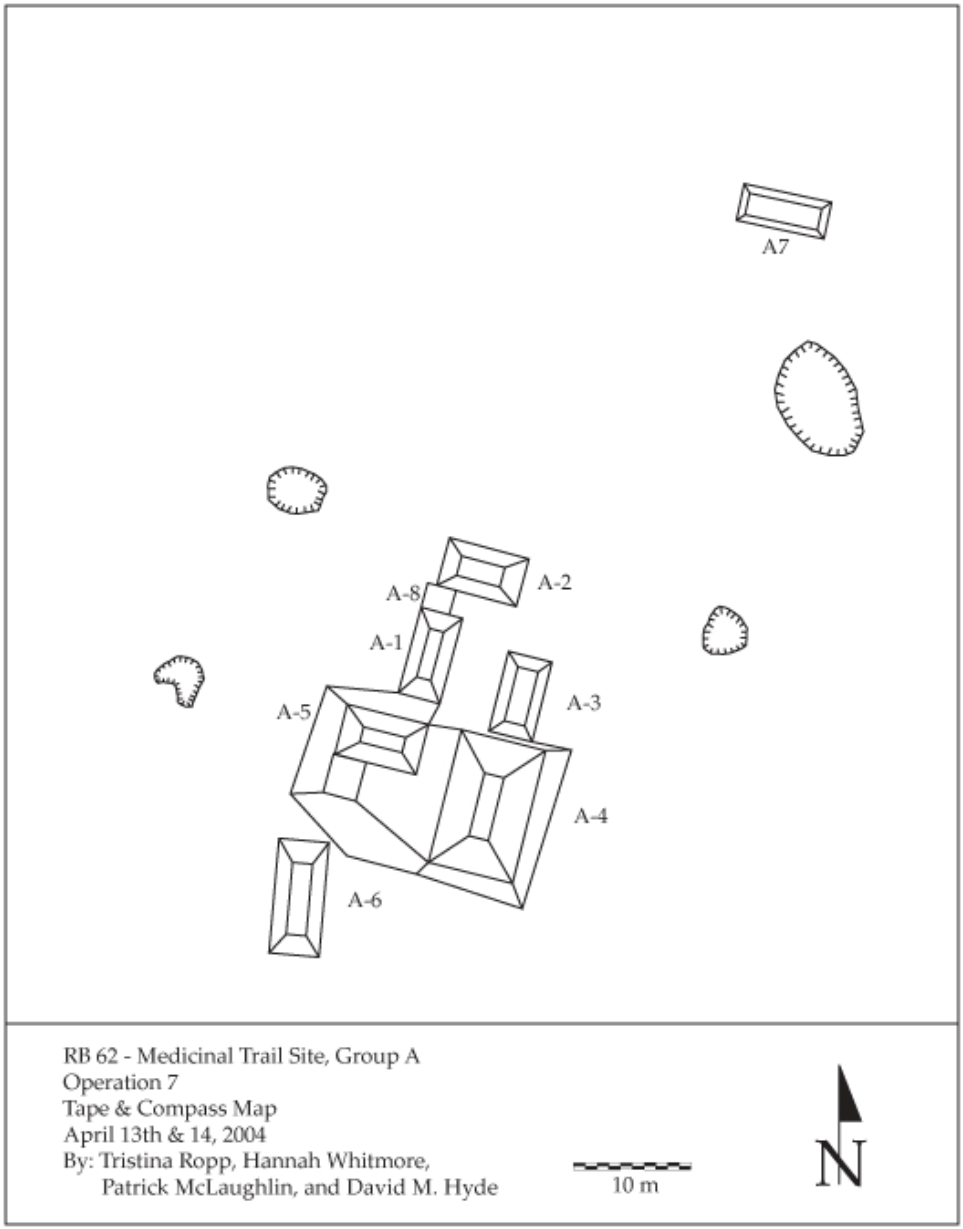

Figure 2. Plan map of Group A of the Medicinal Trail Site.

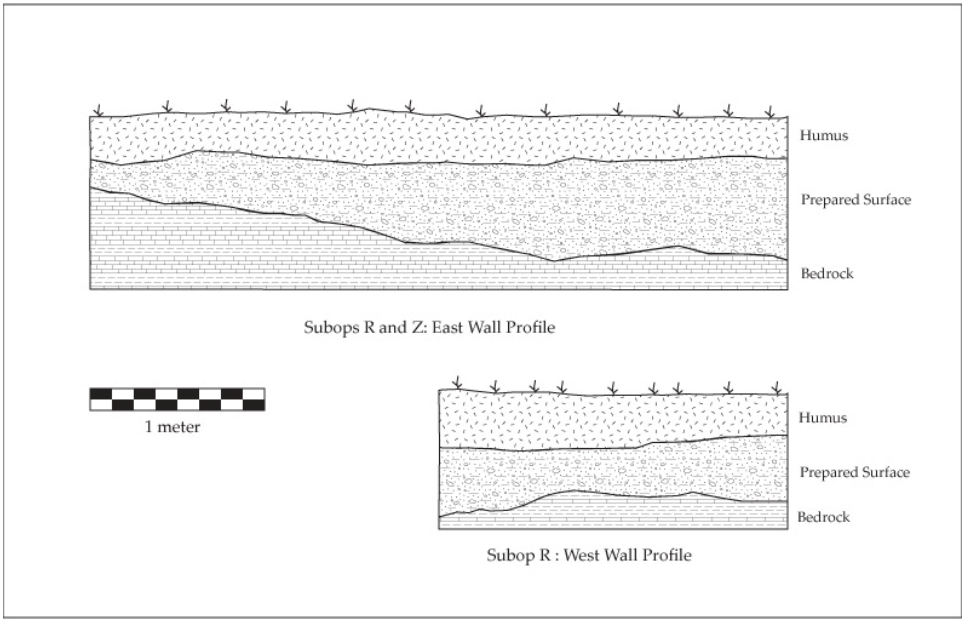

Figure 3. Profiles from periphery of Group A, showing artificial landscape.

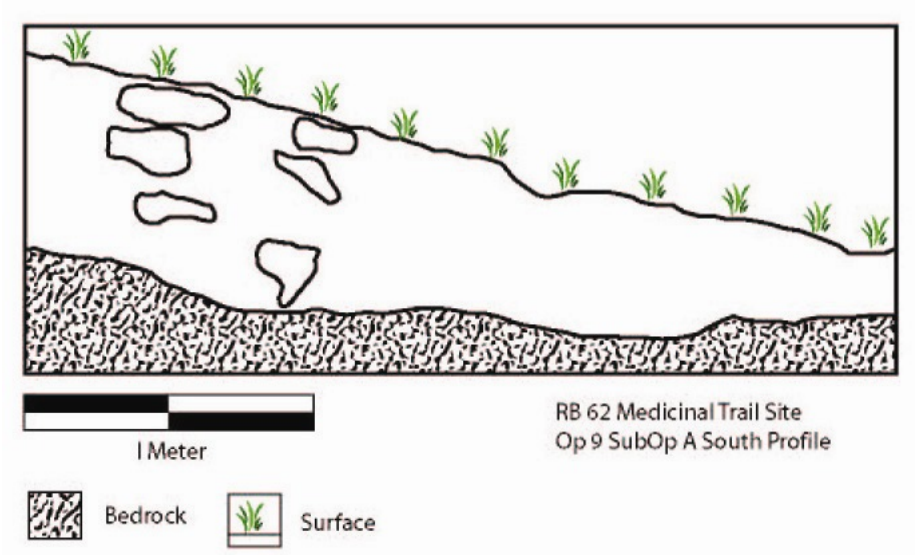

Figure 4. Terrace profile.

Interlaced among the mounds and terraces throughout the Medicinal Trail site are numerous depressions, including four in proximity to Group A. The two depressions immediately west of the group were extensively excavated in 2004 (Lowe 2008). The largest of the depressions at Group A, located just northeast of the Northern Courtyard was initially excavated in 2004 (Me-Bar 2005) and then more extensively by Jeff Brewer in 2007. Brewer (2007) concluded that is was used as a source for potable water with some lithic production occurring around the edge and later used as a trash dump.

NORTHERN COURTYARD

The Northern Courtyard of Group A consists of three mounds located on the west, north, and east sides, with the Middle Courtyard to the south. Excavations in the center of the Northern Courtyard revealed two additional features: a ceremonial round structure, and 50 cm to the south of it, a small square platform (Hyde and Atwood 2007). Structure A-2 was excavated during the 2006 and 2007 seasons (Rodriguez 2007 and this volume).

Structure A-1

Structure A-1 was extensively investigated in the 2004, 2005 and 2006 seasons (Hyde 2005; Hyde et al. 2006; Hyde and Valdez 2007; Figure 5). The dimensions of Structure A-1 are 8 x 4 m with the long axis running north-south. The structure may have supported a vaulted roof based on its 80 cm thick walls and the recovery of beveled stone in the collapse from inside the structure (Figure 6). The interior of Structure A-1 was plastered and in the northwest corner a plaster bench was uncovered. The structure was built atop a cut-stone platform with a plaster floor (Floor 1) extending out from it into the courtyard (Figure 7). The structure exposed in these excavations dates to the Late to Terminal Classic. Overall the structure appears to have been “expensive” based on the labor involved in shaping the stones, the thickness of the walls, and the construction of the bench and possible vaulted roof.

Excavations inside Structure A-1 revealed that the plaster floor was well preserved and thicker at the doorway with an additional row of stones below the plaster floor just inside the doorway, possibly to reinforce this high traffic area. At least one resurfacing appears to have occurred for this floor due to the presence of a lens of sediment that separated two surfaces. Below this Late Classic floor was a layer of small cobble fill then another plaster floor. Below this was another layer of small cobble fill followed by large cobble fill and then another plaster floor that corresponds with the Late Preclassic plaster floor (Floor 2) first uncovered out in front of the structure which covered the round structure and other Late Preclassic features discussed above. Although we encountered multiple plaster floors in these excavations, there was no way to determine if they were from earlier structures or simply extensions of plaza floors that the Late Classic structure was built over.

In the northwest corner of the Northern Courtyard extending north off of Structure A-1 is a free standing low wall that ended slightly west of Structure A-2, but was not attached.

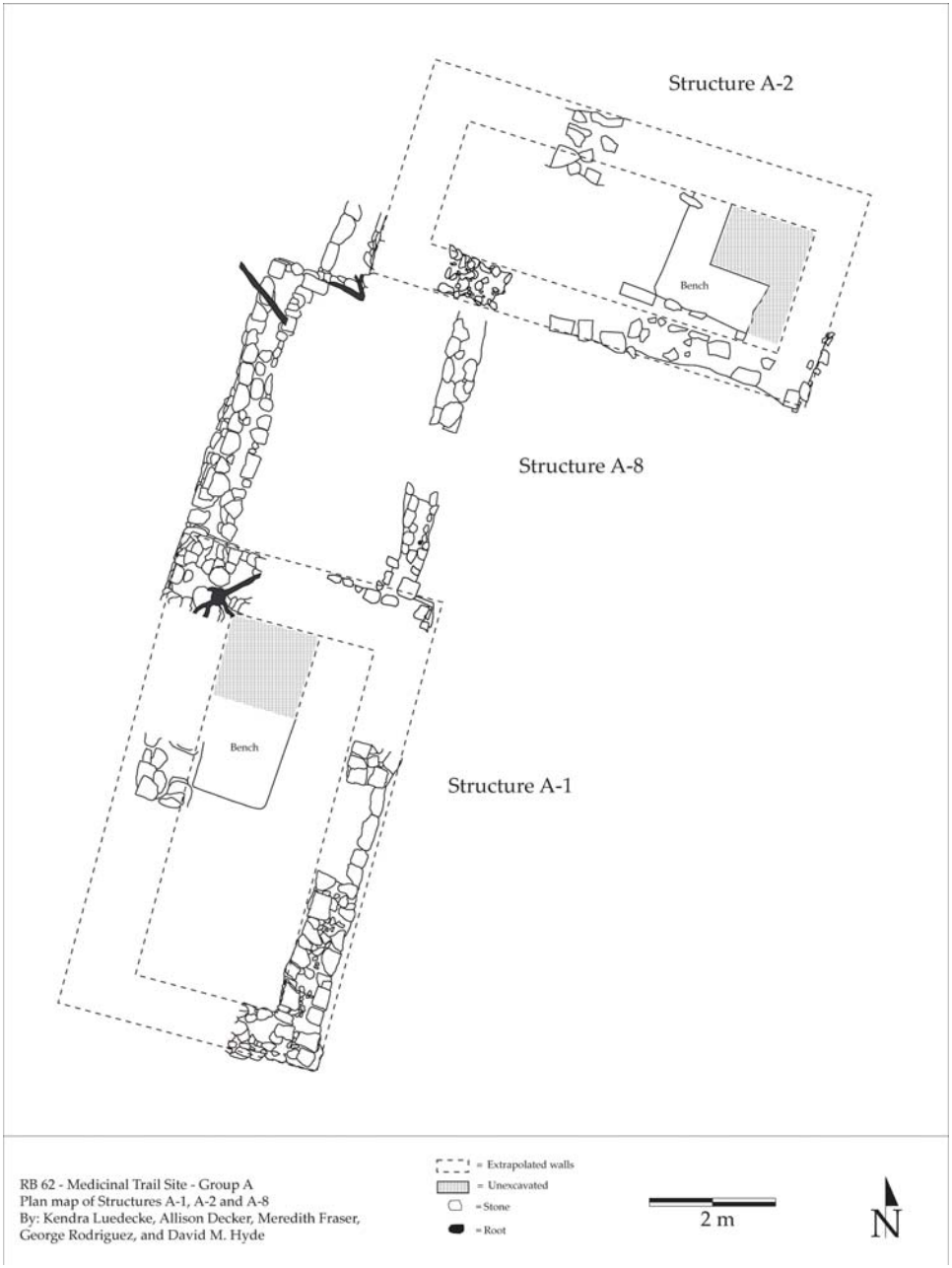

Figure 5. Map of Northern Courtyard, Structures A-1, A-2, and A-8.

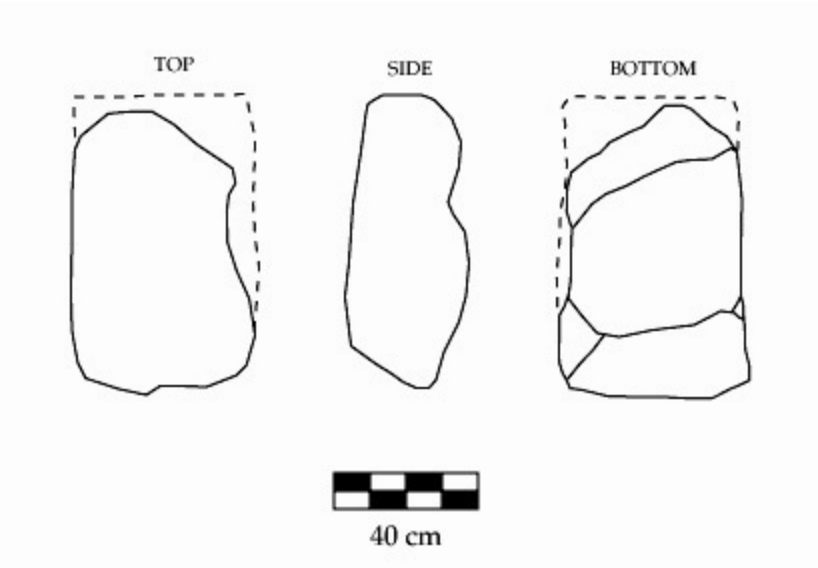

Figure 6. Beveled stone from Structure A-1.

Figure 7. Photo of Structure A-1.

At a later date it was attached to Structure A-2 and then filled in to the east to create a platform for the construction of an ancillary building, Structure A-8 (Figure 5). Built on the platform that extends north off Structure A-1, Structure A-8 consists of a single room with a doorway that opens into the courtyard. The architecture consists of a partially preserved low masonry wall that likely had wattle and daub walls above that and topped

with a thatched roof. The ancillary structure appears to have been a late addition to the courtyard based on excavations on the to the west side of Structure A-2.

Structure A-3

The exploration of Structure A-3 began in 2004 and followed a Late Preclassic plaster floor (Floor 2) initially encountered in the center of the courtyard (Hyde 2005). A single alignment of cut stones was found resting on this floor. Further back from this alignment was a possible wall, however, preservation was poor and this interpretation is not conclusive. Excavations behind this possible wall revealed dry fill and a rough retaining wall were uncovered, all dating to the Late Classic. This season's (2007) excavations uncovered a nearby alignment of cut stone blocks approximately 90 centimeters long N-S continuing north into an unexcavated area and is aligned with those uncovered in 2004. It is not clear what the feature is, but is not thought to represent a platform. It is the only feature discovered on this large Preclassic floor, which covered much of the courtyard at the end of the Late Preclassic.

Additional excavations were conducted on the back side of Structure A-3 in an effort to understand how this building was constructed and to determine its relationship with Structure A-4. Surface indications were not clear enough to ascertain whether or not these two structures shared a back wall and platform, or if they were two separate features with no formal articulation. Although time did not permit us to determine its relationship to Structure A4, we were able to reach an understanding of construction methodology for the Structure A-3 platform: rough, unshaped stones were placed in a row as a way of creating a semi-flat surface on which more formal, cut limestone blocks were set (Figure 8). The top of the prepared earthen surface discussed above that surrounds the group is flush with the top of the unshaped stones leaving only the dressed stones exposed.

Structures A-Sub-1 and A-Sub-2

Most of the work during the 2007 season concentrated on A-Sub 1 and A-Sub 2, which date to at least two Late Preclassic construction episodes. Excavations beginning in the 2007 season in the center of the Northern Courtyard revealed two Late Preclassic platforms sealed by a plaster floor dating to the Late Preclassic (Figure 9). One of these platforms was a ceremonial round structure and the other was a small square platform located approximately 50 cm to the south (Hyde and Atwood 2007). In previous seasons, four caches (Caches 1-4) and some post-cranial human bone (Burial 2) had been recovered from on-and-around this small platform. During the 2007 season, the remainder of Burial 2 was excavated revealing that the skull was placed between two Late Preclassic Sierra Red plates (see Wren and Kalamara Cavazos this volume). Additionally, this season's excavations to the southwest of the square platform uncovered Burial 3, a cist burial (see Kalamara Cavazos and Wren this volume).

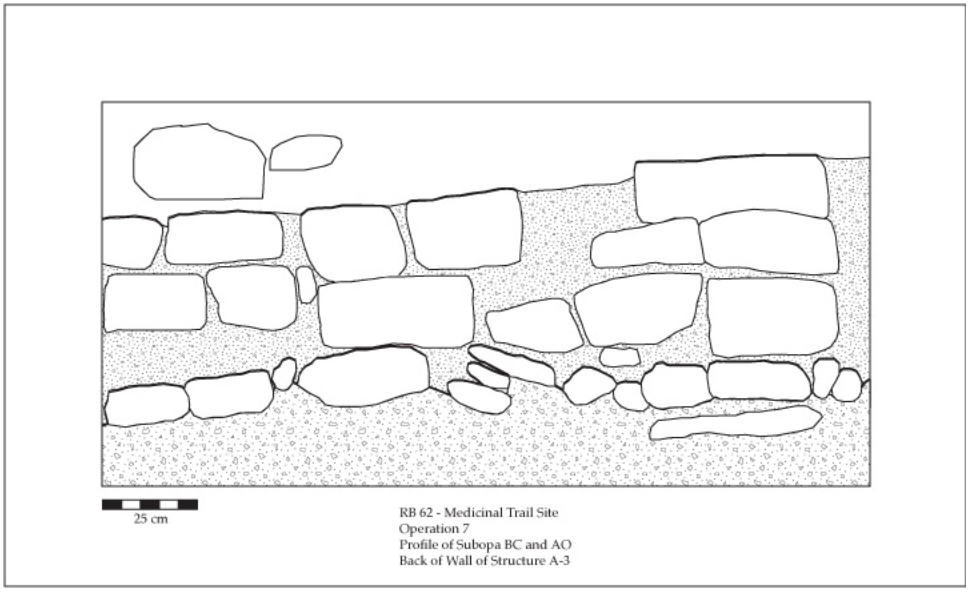

Figure 8. Back wall of Structure A-3.

Located in the south central portion of the Northern Courtyard, the square platform is located below the courtyard with no evidence from the surface of its existence as it was covered over by a plaster courtyard floor. It measures slightly less than 1.5 m to a side, is roughly 50 cm tall and rests on Floor 3, which dates to the Late Preclassic. On the western and southern sides of the platform there are remnants of preserved plaster floor which rolls up and partially over the base of the square platform. In some places there is red pigment indicating the platform and likely the floor were entirely red.

Previous excavations indicated that on the northern side of the platform there is an irregularity in the construction of this platform whereby the eastern half is offset to the north by roughly 10-15 cm relative to the western half. The western half is also made from flat limestone blocks approximately 20 cm in length and 10-15 cm thick stacked three high. Conversely, the eastern half was made from larger limestone blocks and only two courses tall. The lower course is a single block about 70 cm long and about 40 cm tall on top of which is a course of smaller stones. Cache 1 was located on the northwest corner of the small platform (Hyde 2005) and discovered west of the platform in the dry cobble fill between Floors 2 and 3 were three caches (Caches 2-4), each slightly overlapping one another, placed in a triangular arrangement. All four of these caches consist of lip-to-lip Sierra Red vessels.

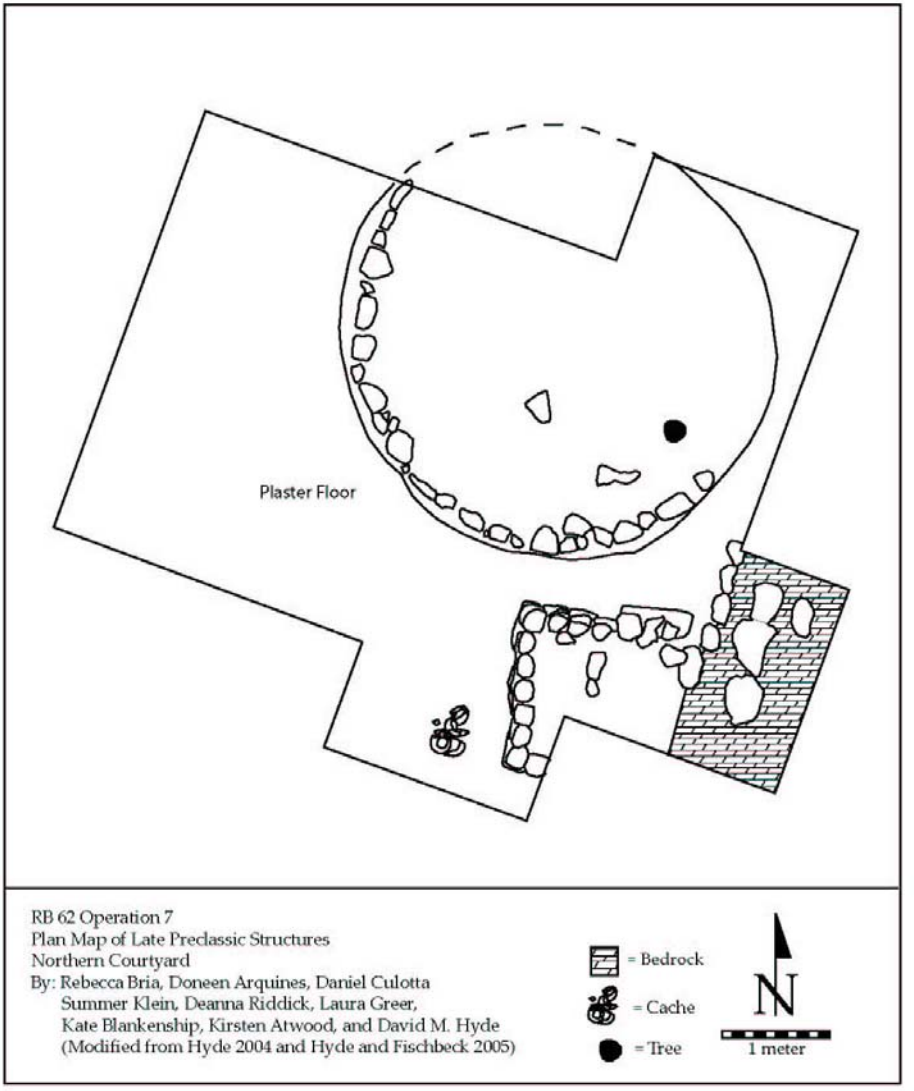

Figure 9. Plan map of Structures A-Sub-1 and A-Sub-2.

In an effort to better define this platform, excavations followed the southwest corner alignment eastward to see if the irregularity described above continued. The same irregularity in construction that was uncovered on the north side of the platform was repeated on the south side. The eastern half of the platform is approximately 10-15 cm

longer on the north and south sides creating a slightly T-shaped platform. When the T-shaped platform is viewed as originally having been rectangular then caches were placed at opposing corners. Cache 5 was uncovered on top of the platform just west of the midpoint along the edge just prior to where the wall juts out. The cache, like Caches 1-4, consists of two Sierra Red vessels placed lip-to-lip the contents of which include one piece of worked coral, a piece of modified jade, and as of yet unidentified seeds. When viewed in conjunction with Cache 1, this further confirms the interpretation that the platform was originally a rectangular platform. Cache 1 was placed on the northwest corner of the platform while Cache 5 was placed on what would be the southeast corner of a rectangular platform. Two burials and six Sierra Red lip-to-lip caches have been found in the area immediately surrounding and/or on top of the T-shaped platform highlighting the ritual importance of this area.

The absence of the plaster floor east of the round and small "square" platforms detailed in the 2006 field report (Hyde and Atwood 2007) was further investigated. Excavations revealed a continuation of the N-S alignment of large (approximately 20-30 centimeter) stones which were resting on bedrock. Like those uncovered previously, these stones appear to be semi-rectangular or oval in shape, and are associated with a plaster surface (Floor 4) placed just above bedrock. This plaster does not fully cover the bedrock, and is only associated with the large stones, and is absent in places. Most likely this alignment of stones, just above bedrock and at the edge of Floor 3, is a foundation for the surface on which the earlier Late Preclassic occupation, the round structure, and the small platform, were built.

MIDDLE COURTYARD

The Middle Courtyard consists of two structures on an artificially elevated plaza. One of the mounds is a presumed residential mound located in the northwest corner of the courtyard, facing south with a possible attached patio resulting in something of an L-shape. The other structure is a large temple-like structure located on the east side of the courtyard facing west. Although bedrock was not reached, previous excavations into the courtyard indicate that the plaza is artificially elevated (Hyde 2004). The construction sequence for the plaza, based on a test pit in the center of the courtyard, is a layer of large ballast stones (on average about 50 cm), then a layer of clay. On top of the clay was a layer of large cobble fill (on average about 15-30 cm) followed by smaller fill (on average about 5-10 cm), and then sascab. Above the sascab was a layer of large cobbles (on average about 10-20 cm), then small cobbles (on average about 5-10 cm), then gravelly fill and finally the humus layer. The ceramics for the gravelly fill are Tepeu 1-2 (early Late Classic), while everything below it date to the Late Preclassic.

To determine the nature of access to this courtyard from the south where there is a significant change in elevation, excavations were conducted at the southern edge of the courtyard. Instead of a staircase, a vertical wall was uncovered consisting of well cut limestone blocks and a thick retaining wall made from unshaped stones, between which

was fill material (Figure 10). This would indicate restricted access to the Central Courtyard from the south and only a narrow passageway into the space from the north.

Figure 10. Plaza wall, south side of the Middle Courtyard.

Based on surface indications, moving from the Northern Courtyard into the Middle Courtyard one walks up a slope to a narrow passageway into the plaza. This raised the question of what was the articulation between the two areas. Two hypotheses were suggested, that there was either a small stairway leading from the Northern Courtyard up to the Middle Courtyard, or that part of the slope was the result of collapse from Structures A-4 and A-5 that tumbled down and met at this narrow passageway.

Three contiguous 1 x 2 m units running north-south were opened south of Burial 3 in order to understand the articulation between the Northern and Middle Courtyards as well as to find a surface that could be followed to the base of Structure A-4. This trench uncovered an amorphous layer of limestone blocks resting on a Late Classic floor/prepared surface. The amorphous limestone layer was removed and is believed to represent tumble, but an alignment parallel to the structure was discovered in the eastern profile. This may represent part of the structure. A vertical stone alignment resting on the Late Classic surface consisting of two courses of stone approximately 20 centimeters long and 25 centimeters high is apparent in the eastern profile approximately 95 centimeters north of the possible alignment parallel to the temple/shrine. No evidence of a stairway was found that linked the two courtyards leading to the conclusion that a single platform step existed and the impression of a stairway was just the result of tumbled material from Structures A-4 and A-5 converged at this place.

Structure A-4

This season marks the first investigations of Structure A-4, the largest structure at Group A and located in the Middle Courtyard. Structure A-4 has been interpreted preliminarily as a temple- or shrine-like structure based on the fact that it is the largest structure at the group, is located on the east side of the courtyard, and of the three courtyards it is in the highest one with the greatest restricted access. Structure A-4 is approximately 12 m long and 8 m deep with a height of about 3 m above the courtyard (although much taller from the back side, perhaps 6 m).

The goal for Structure A-4 was to define the last construction phase so the initial investigation consisted of a 2 m wide excavation unit that extended from the courtyard up 4 m to the top of the structure to search for a stairway. The architecture that was exposed is in extremely poor condition, and many of the limestone construction blocks have decayed into an extremely soft, light-colored powdery soil that blends gradually into depositional sediment and humus. Excavation uncovered five steps leading eastward up the face of the structure, followed by two landings (Figure 11). The steps are variable in height, from approximately 10-25 cm, and a total of approximately 130-140 cm in length was uncovered although the actual width of the staircase was not determined. The possible remains of a poorly preserved plaster surface were discovered on the landings. Landing 1 is approximately 65 centimeters in length. Landing 2 is approximately 20 centimeters above Landing 1, and approximately 65-70 cm in length. Due to settling and other post depositional affects the landings are not level instead slope downward to the west, as do the steps, making the exact determination of their length difficult. The center/top portion of the structure remains undefined, and is in poorer condition than the rest of the structure. There is a slight cleft at the top of Structure A4 suggesting that there may have been either two structures on top of the platform or that the structure on top had two rooms.

Figure 11. Steps of Structure A-4.

SOUTHERN COURTYARD

The Southern Courtyard consists of a single mound on the west side of the patio below the elevated Middle Courtyard. Work was undertaken in this courtyard during the 2004 season to test the patio area for occupation history and in 2005 investigations expanded to Structure A-6 and continued in 2006 season. No work was undertaken in the Southern Courtyard this season.

The patio area of the Southern Courtyard had been artificially leveled, much like the areas to the east and west of the group. Having stripped the sediment to bedrock, fill, and midden material was placed over it, creating a level area onto which was constructed an earthen floor. This earthen floor is found throughout the courtyard and abuts with the Structure A-6 platform. The modification of this courtyard space is the same as that found on the periphery of the group.

STRUCTURE A-6

Structure A-6 is a masonry construction approximately 12 m long on the long axis resting on a platform that extends between 30 cm (in the south) and 50 cm (in the north) in front of the walls (Figure 12). The doorway is almost 1.5 m wide and rather than being situated in the center, is offset to the south. The walls of Structure A-6 are thick like Structure A-1, on average 80 cm. Excavations have indicated a single large interior space. There is no interpretation, at this time, for the function of this structure or why the door is off-set.

STRUCTURE A-7

Excavations on and around Structure A-7 were conducted to determine its dimensions, function, and chronology. Structure A-7 is a low platform of approximately 80 cm in height and 9 x 4 m horizontally with the long axis running E-W (Figure 13). The mound is more or less isolated from the core of the group, but is near a large depression (Brewer 2007; Me-Bar 2005). Excavations around the platform uncovered a midden in a deep artificial pit and evidence for limestone quarrying (Hyde and Martinez 2007).

The midden deposit was located on the east side of the platform and contained large amounts of charcoal, lithic debitage, a charred macrobotanical specimen (possibly a squash seed) and ceramics, including numerous large ceramic sherds (Hyde and Martinez 2007; Figure 14). The midden was located in an artificial depression in the bedrock, approximately 2 m in diameter and extended under Structure A-7. This suggested that the occupants of an earlier, smaller structure may have created the midden deposit and at a later date this smaller platform was either enlarged or an entirely new larger one built over the previous one. Either way, the eastern edge of the platform was built over the midden. The portion of the midden deposit that was beneath Structure A-7, near the platform's northeast corner on the east side, was about 15 cm deep and yielded less cultural material. The midden dates from at least as early as the Late Preclassic, with

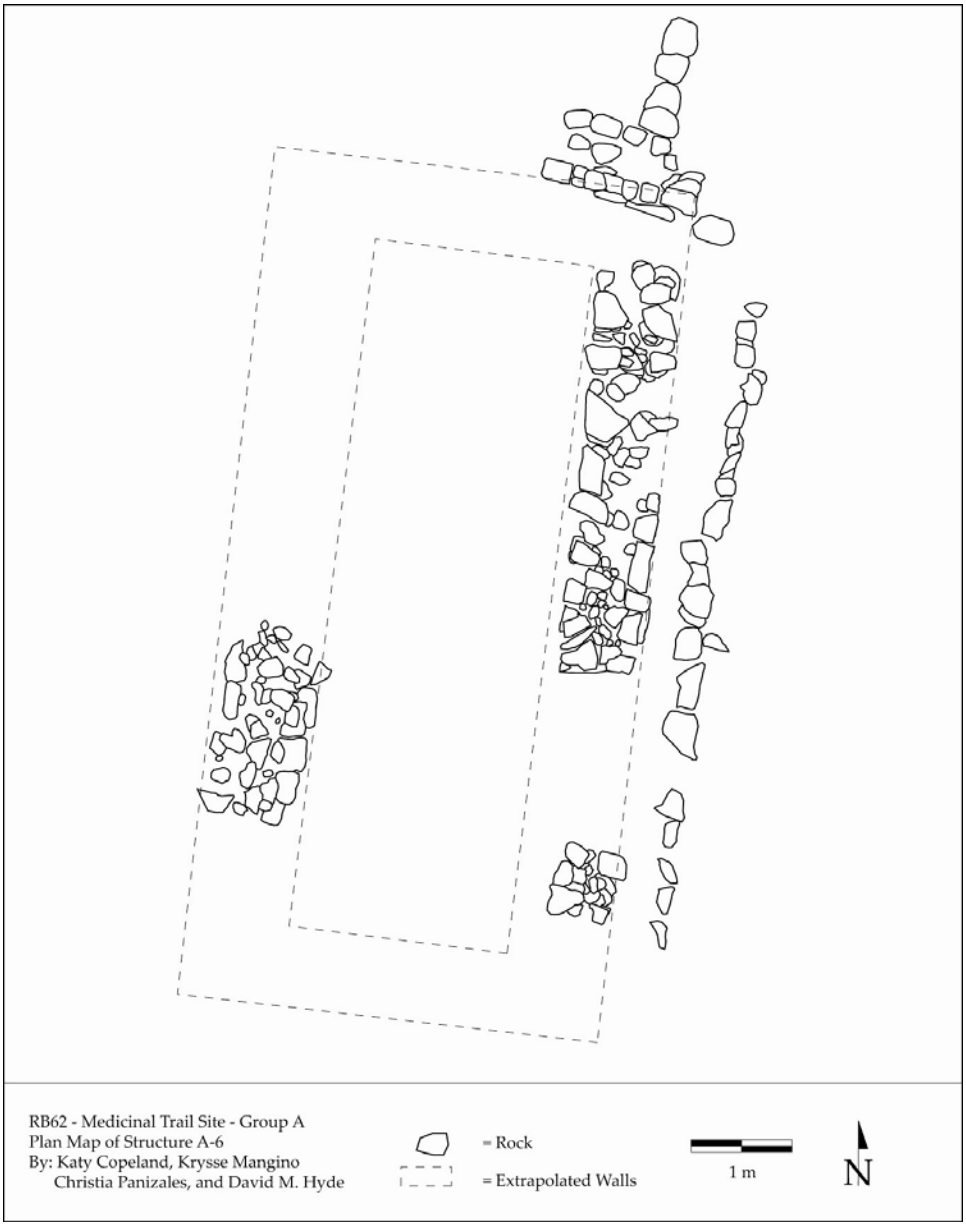

Figure 12. Plan map of Structure A-6.

Figure 13. Plan map of Structure A-7.

Protoclassic, Early Classic, and some Late Classic material as based on recovered ceramics (Lauren Sullivan, personal communication 2006).

To determine if the deposit was an *in situ* midden or a relocated dump, a section of the pit deposit was excavated in four arbitrary 15 cm lots to control for internal chronology. That ceramic analysis has not yet been completed as of this report. Additionally a soil sample was also taken from each lot to be tested for preserved pollen. The palynological results were negative; no fossil pollen was recovered (John Jones, personal communication 2006).

Evidence for quarrying was found on the north and east sides of the northeast corner of Structure A-7 in the form of rectangular scars on the exposed limestone bedrock that outline cut blocks in the early stages of removal and are equivalent in size of those typically used for masonry building (Figure 15). Like the midden, the scars in the bedrock extended beneath the corner of the platform. The northeast corner of Structure A-7 was excavated to follow these features and to see if perhaps the platform had been

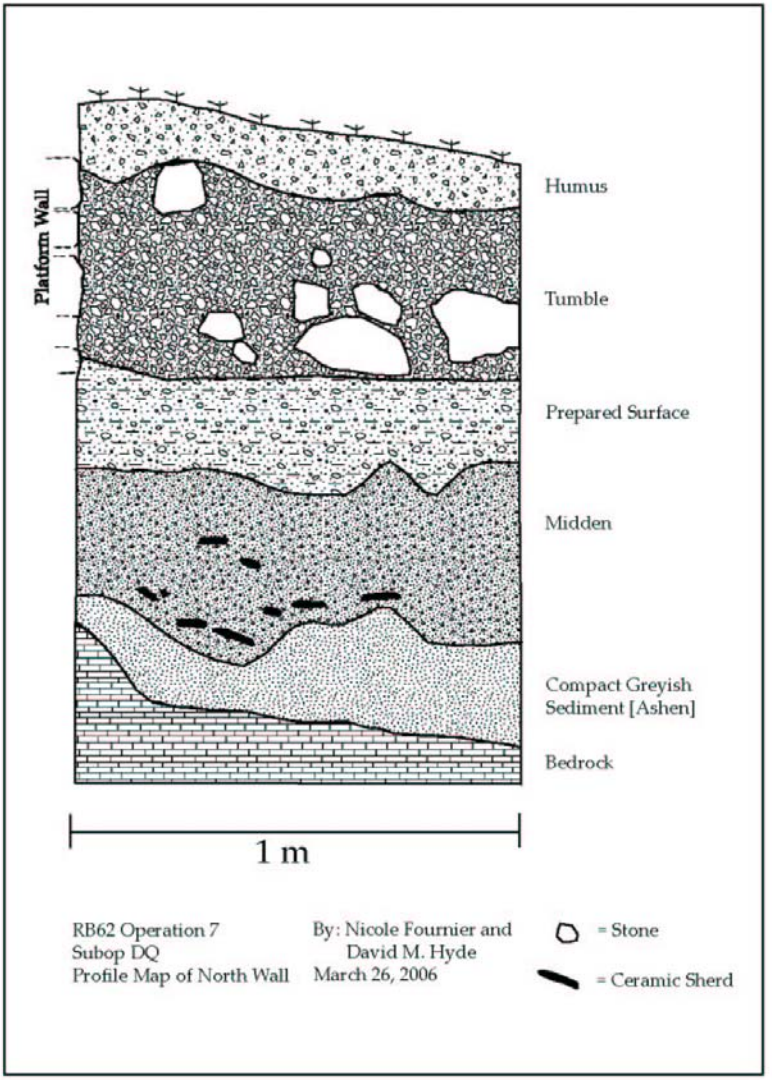

Figure 14. Profile of midden against platform wall.

either enlarged to extend over the platform or if an altogether different was built over it. Though no evidence for a smaller structure was uncovered, there was an earthen floor and below that there were additional scars in the bedrock which continued under the unexcavated portions of Structure A7.

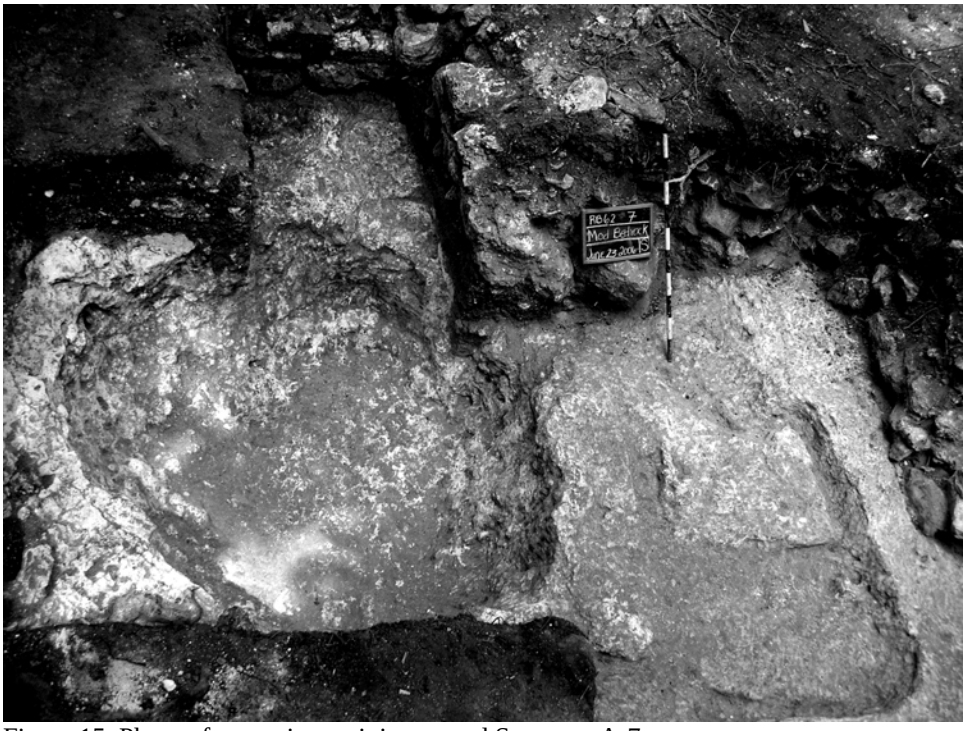

Figure 15. Photo of quarrying activity around Structure A-7.

CONCLUSION

A few preliminary interpretations can be made regarding the inhabitants of Group A based on the excavations described above. The group dates to the early Late Preclassic through the Terminal Classic with some evidence of a possible Middle Preclassic occupation. The group is situated in a favorable hilltop setting with the slopes leading away from it extensively modified with features related to agricultural intensification and water and soil management. From at least the Late Preclassic important ceremonial functions were fulfilled at this locality based on the presence of the round structure and platform with associated caches.

Numerous studies have demonstrated that good agricultural land is limited in the Maya Lowlands and was therefore occupied first in most areas (Fedick and Ford 1991; Furley and Newey 1979; Scarborough and Valdez 2003). As populations increased, the founding households, like Group A, had an economic advantage over later arrivals due to their access and control over a non-replicable source of economic wealth which may have led to the development of inequality and the emergence of hinterland elite with limited social power (Hendon 1991; McAnany 1993).

Social status in Maya studies is often presented as either "elites" -- those in the large centers, and "commoners" -- those outside the major centers. However, social status is much more complex and should be viewed as a continuum with a wide range of variability in each category. Findings at Group A fit well with indicators of elite social status among the Prehistoric Maya such as the presence of public architecture and labor intensive structures, the preferential location of settlement, and presence of exotic items like jade, obsidian, and shell (Marcus 2004)

Four years of excavation at Group A of the Medicinal Trail Site in northwestern Belize has led to the identification of a long lasting hinterland elite settlement in the periphery east of La Milpa. All three courtyards and an isolated platform to the north have all been sampled to varying degrees. Late Preclassic material has been recovered from all areas of the site and most of the exotic materials date to the Late Preclassic and were recovered from standard contexts such as construction fill or midden. The economic wealth of the Group A inhabitants was likely derived from the surrounding landscape's agricultural potential based on the extensive modifications identified on the slopes leading away from the group. More extensive survey is needed to better understand the settlement density at the Medicinal Trail Site and additional testing is required, particularly of the terraces, to obtain a chronology in order to more fully understand the development of the community.

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REPORT OF EXCAVATIONS AT THE MEDICINAL TRAIL SITE: OPERATION 7, STRUCTURE 2

George Rodriguez, The University of Texas at San Antonio

INTRODUCTION

2007 marked a continuation of the investigations into two structures discovered within a residential complex (Operation 7) at Medicinal Trail (Figure 1). The first of these is Structure 2, a modestly sized structure marking the northeast boundary of the complex. The other is what is believed to be an ancillary building situated between Structures 1 and 2. The goals of this year's excavations included finding the intersection of the ancillary building's walls with Structure 1, and investigate the internal space of Structure 2 to determine its size and function. Both of these goals were accomplished this year.

EXCAVATIONS

A brief description will be given on individual sub-ops. Eleven new sub-ops were opened this year, with the majority (ten) focused on Structure 2 (Figures 2 and 3). The other sub-op completed a goal set last year – to completely define the southern entrance wall of the ancillary building and find the intersection of this wall with Structure 1. The goal this year was to investigate the internal space of Structure 2 to determine size and whether there was any significant architecture within the building. The sub-ops opened this year were: EX, EZ, FB, FD, FE, FH, FJ, FM, FN, FO, and FP.

Subop EZ

This sub-op was an east-west 1 x 2 m unit south of Subop EK (excavated in 2006), and represents the only unit not focused on Structure 2. It was opened to follow the southern entrance wall of the ancillary building to the intersection of this wall with the northern wall of Structure 1. The intersection of the two structures was found in the southern edge of the unit. Structure 1's northern wall was very well-preserved with worked stone still intact. The northeastern corner of Structure 1 was defined by three stones stacked on one another, with the rest of the wall having large and square faced stones. Only the very top row of stones seemed to have suffered any significant damage.

The rest of the ancillary building's southern entrance wall was also uncovered. The closer we got to Structure 1, the more the wall preserved in terms of height, but it also had a severe eastward tilt, so much so that some depositional sediment was kept in place to prevent the wall from falling over. Other than its tilt, this wall was characterized by large stones on top. Excavations continued down to previously exposed surfaces, both inside and outside the ancillary building. Near the eastern profile wall of the unit, a metate fragment was found underneath a fallen stone and removed carefully.

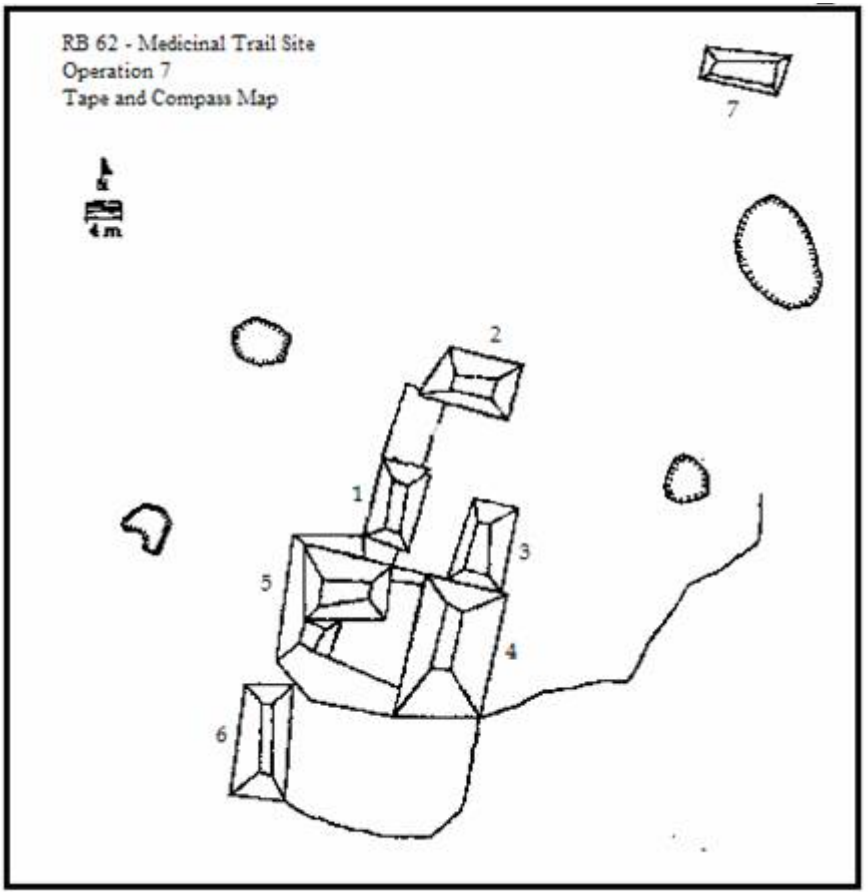

Figure 1. Map of Medicinal Trail Site (Hyde 2004: Figure 1)

Subops EX and FB

Both of these subops dealt with the exterior of Structure 2's eastern wall as well as the southeastern corner. The purpose of opening these units was to not only define the eastern exterior, but also to determine the thickness of the wall to find out if it is consistent with the rest of Structure 2's walls.

Subop EX

EX was the first unit opened at the beginning of the season. It was a 1 x 1 m unit east of Subop EW (excavated in 2006). The goal of this unit was to find and define the southeastern corner of Structure 2. Using the previously exposed wall and surface as a guide, this was accomplished quickly as the corner of Structure 2 was found in the northwestern edge of the unit. A very well-defined cornerstone was found atop very

poorly defined base stones. Above the cornerstone was the remainder of a highly eroded worked stone uncovered in 2006. The stones constituting much of the southeastern corner seemed somewhat dislodged from their original positions. In parts of this unit that did not contain Structure 2's wall was found construction tumble and rubble, typical of areas surrounding this structure. The unit was excavated down to a previously exposed surface uncovered last year. Of particular interest was a cobble chert piece (approximately 14 x12 cm) found at the base of the wall's corner that may have been worked.

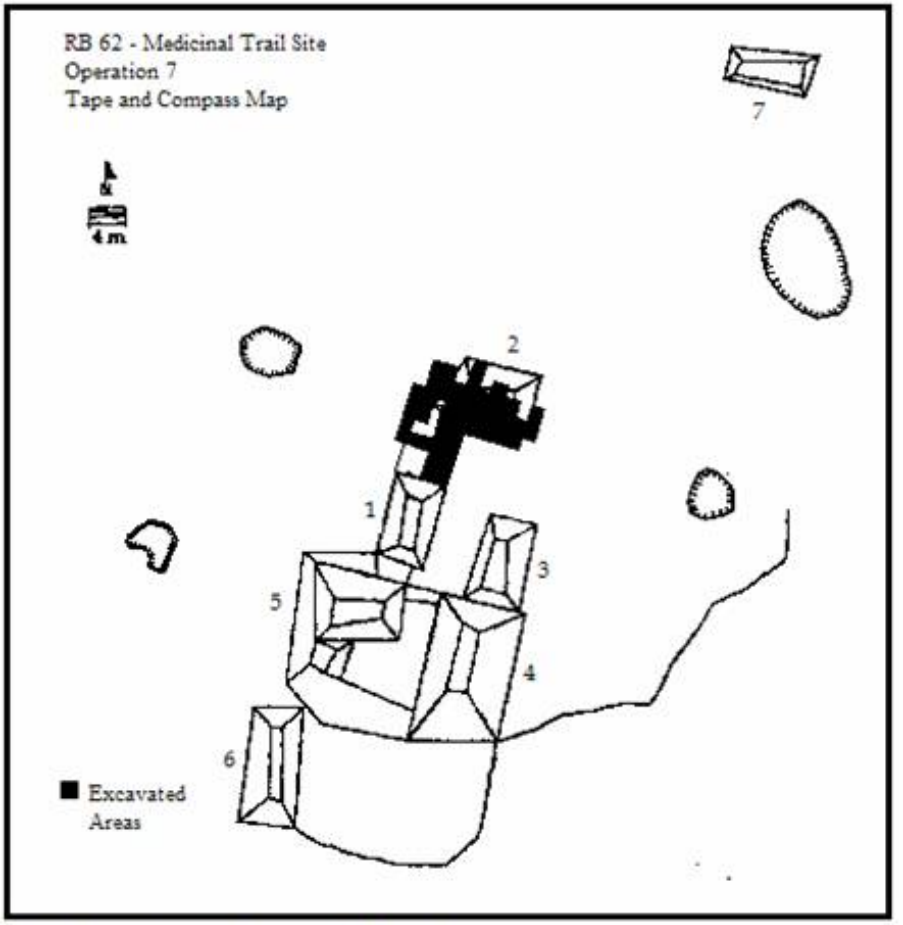

Figure 2. Map showing locations of suboperations.

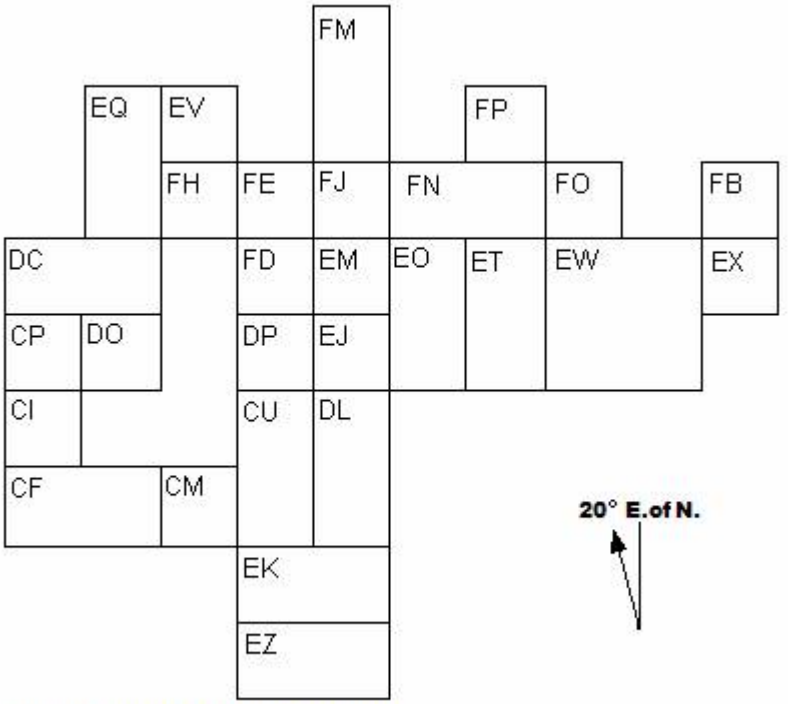

Figure 3. Map of suboperations.

Subop FB

This subop was a 1 x 1 m unit north of EX. It was opened to follow the eastern wall northwards. The eastern wall ran along the western edge of the unit and had a southwest-northeast orientation. This orientation may be caused by the wall's poor condition as a southeast-northwest orientation would be expected. Unlike the southern wall, the eastern wall was very poorly preserved as no discernible wall face could be found. Only remnants of the original wall were uncovered, indicated by worked stones seemingly in place. However, between the worked stones was wall rubble, most likely part of the rubble core that made up the interior of the structure's wall, with most of the facing stones dislodged and found throughout other parts of the unit. Excavations continued until we reached the surface uncovered in previous units.

Subops FD, FE, FH, FJ, and FM

These subops were grouped together due to their location as all were placed in the western half of Structure 2. All, but Subop FD, deal with the interior space of Structure 2. The goal of these sub-ops was to define this interior space and its associated architecture including the walls and floor. With the interior space defined, it is then

possible to determine its surface area. Lastly, these sub-ops were opened to determine the location of Structure 2's entrance.

Subop FD
This was a 1 x 1 m subop opened west of Subop EM and north of Subop DP. The unit was opened to define the top of Structure 2's southwestern wall that managed to preserve largely intact. The wall covered the majority of the unit and measured approximately 75 cm in width. Excavations stopped when it was clearly evident that what was being observed was the top of the wall. Lying atop this wall are small limestone cobbles measuring about 10 cm in diameter with no visible remains of worked stone. Most of the rocks constituting the wall were sensitive, some disintegrating at the touch. Due to the fact that the wall covered most of the unit, it was difficult to determine anything concerning the interior and exterior face of the wall. Measuring roughly 75 cm, the width of this wall is consistent with the walls found throughout the residential complex.

Subop FE
This was a 1 x 1 m unit placed north of Subop FD and was the first to be placed within Structure 2. The unit was opened to expose the interior face of Structure 2's southern wall as well as find the building's floor. Excavations continued down until an interior floor was reached, which was poorly preserved due to fallen stones. This lot was defined by a large number of rocks of all sizes including very large ones exceeding 40 cm in diameter. Roughly 15 cm from the floor two 40 cm rocks were found and seemed to be "stacked" one on top of another. In addition to uncovering the floor, the inner face of the southern wall was also defined. Upon finishing excavations, it was determined that the southern wall, at its highest point of preservation, was approximately 90 cm in height. This is by far the best preserved wall throughout the entire structure.

Subop FH
This subop was originally a 1 x 1 m unit opened to the west of Subop FE, but was extended 30 cm south in order to follow the southern wall. The goal of this unit was to follow and define the interior wall face of Structure 2's southern and western walls and discover where these two intersect. Excavations continued until the plaster floor was reached. Based on observations the floor may have undergone a re-surfacing due to the presence of two different surfaces. The uppermost surface was relatively smooth but was found only in the northwestern part of the unit. The lower surface was not as well preserved, but was more prevalent throughout the unit. However, these two surfaces may also be part of the same floor with differing degrees of preservation. The western half of the unit is defined by the western wall whose exterior face was uncovered last year. It was hoped that excavating within the structure would clarify the western wall's degree of preservation and orientation better than last year's excavations since it was discovered that this wall was badly eroded and tilted severely. However, it was discovered that this wall did not preserve at all. This conclusion is based on the fact that in spite of following both the southern wall and floor, no clearly defined face of the western wall could be

discerned in the excavations. Digging continued slowly towards this wall and after reaching a point where we suspected the wall to be, it was determined that it was not preserved well enough for its definition to be accomplished. The only part of the western wall uncovered was what we expected to be the top of the wall, which was defined by small cobble stones.

Subop FJ

This was a 1 x 1 m unit opened east of Subop FE and north of Subop EM. It was opened to follow the floor surface eastward as well as the southern wall from inside the structure. Like every unit placed within Structure 2, this one had a good amount of fallen stone rubble, some of it consisting of worked stones. The floor was found and followed to the edges of the unit and seemed to have preserved relatively well. What was believed to be the southern wall (uncovered in Subop EM in 2006) in this unit was followed, but eventually torn down because of its poor preservation. It was hoped that this unit would clarify the location of the entrance to Structure 2, but upon completing excavations there was still no definable entryway into the building.

Subop FM

This was a north-south 1 x 2 m unit opened north of Subop FJ in order to follow the floor northward as well as find and define the northern/back wall of Structure 2. Once again excavations continued until the plaster floor was reached. The condition of the floor in this unit was consistent with what had been found with the exception of the very northern edge of the unit. The floor here was very well-preserved with little indication of damage caused by fallen debris. The northern wall of Structure 2 was also discovered and excavations were done both within and outside the structure. However, like most of the walls of the structure, the northern wall was poorly preserved. Two leaning stones roughly 40 cm in diameter and aligned side-by-side were discovered within the structure and are believed to be part of the back wall. This conclusion is based on the fact that these two stones were obviously shaped as indicated by their relatively smooth surfaces. Because these stones were leaning over, it made the rest of the wall difficult to define as well as determine the exact width of the wall. What is believed to have been the top of the wall was excavated roughly in the middle of the unit. The rocks constituting this wall easily disintegrated with the only remaining part of the wall still standing measuring about 40 cm in height. If the two leaning stones were propped upright, the width of the wall would have been fairly close to the 75 cm thickness common in all of Structure 2's walls. Excavation outside Structure 2 in this unit ended when a flat, white surface was encountered. Due to fallen stones and the limited space within the unit, it was not determined whether this surface was a base stone or bedrock.

Subops FN, FO, and FP

These sub-ops were also grouped together due to their location in the eastern half of Structure 2. Furthermore, they were all opened with the intent on defining the bench first discovered in Subop FN. The goals remained the same as earlier subops – define the

interior architecture in order to determine the total size of the structure and its interior space.

Subop FN
This was an east-west 1 x 2 m unit placed east of Subop FJ and north of Subops EO and ET. The goal of the unit was to continue to follow the plaster floor uncovered in the western half of the structure as well as the southern wall eastward. During excavations, a clear difference in the depositional layer in the eastern half of the sub-op was encountered as a very rocky surface just below the humus layer was present. This surface was very different than the western half, which exhibited typical depositional characteristics found throughout the excavations. The reason for this difference was not discovered until we dug past the rocky surface and encountered a bench, which still had much of its plaster covering. Excavations continued in the western half of the unit until the floor was reached. When this was done it was determined that the bench was approximately 40 cm in height and covered just about the entire eastern half of Structure 2's interior space. The bench's surface was well-preserved in most areas but was clearly damaged by construction tumble. The height of the bench was similar to that of the southern wall, indicating that most of the wall has been completely destroyed. The floor in this unit also showed similar patterns of destruction by fallen stones and remained largely intact though clear depressions where stones had fallen could be seen.

Subop FO
This sub-op was a 1 x 1 m unit opened to the east of Subop FN in order to follow and define the bench. Because of the bench excavations did not take as long to complete due to the shallow depositional layers. The majority of the bench was uncovered along with small portions of the southern wall. The bench was not as well-preserved in this unit as the plaster surface was more eroded as we proceeded eastward. The eastern wall was never encountered in this sub-op and must have been a few centimeters further east. However, no attempt to find it was made due to the fact that a new sub-op would consist of mostly the top of the eastern wall.

Subop FP
This sub-op was a 1 x 1 m unit north of the eastern half of Subop FN and was opened to follow the bench northward towards the back wall. Preservation of the plaster covering was much better in this subop than in Subops FO and FN. The rounded edges of the bench were more pronounced in this sub-op and the top part of the bench had a smoother surface. Once again excavations were very shallow with the exception of the western third of the unit which went all the way down to the floor. In this portion of the sub-op the back wall was encountered including cut stones at the bottom. The portion of the wall in contact with the bench, however, was not well preserved.

CONCLUSIONS

Size

As stated above, one of the goals of the excavations was to determine the size of Structure 2 in order to get some idea of its function. After excavating most of the building (Figure 2), the interior space was measured to be approximately 5.5 m x 2 m, giving an area of 11 m^2 within Structure 2. When accounting for the 75 cm-thick walls, the estimated total size of Structure 2 is 7 x 3.5 m. The size of Structure 2, in addition to the bench, strongly suggests that this building was most likely residential. It is comparable in size to Structures 1 and 6 which have been more extensively excavated.

Bench

The bench within Structure 2 is the second one found within Op. 7 thus far. It measures 40 cm high and about 2 x 2 m, taking up nearly the entire eastern half of Structure 2. Much of its plaster coating is still preserved with the front rounded edges having preserved best. However, much like the plaster floor, the bench has clear evidence of damage caused by construction tumble. The placement of the bench within Structure 2 differs slightly from that in Structure 1. Structure 2's bench extends from front wall to back wall, whereas Structure 1's is cornered within the building. Regardless of placement and size, the bench within Structure 2 is a strong indicator that the building served a domestic purpose, as opposed to simply acting as a storage area. Benches served as platforms upon which residents slept and hosted visitors - as indicated by Maya polychrome vessels. Though scenes on these items are from royal settings, it is not unreasonable to think that similar activities were carried out here as well. If indeed Structure 2 was residential, then its occupants would most likely have been members of an extended family.

Entrance

One of the problems encountered last year was the difficulty of finding the entrance to the building. It was assumed to have been located in the units EM and EO where there was no discernible wall feature. Upon completing excavations this year, it is apparent that this assumption is correct. This location is consistent with the entrances to other buildings in Op. 7 in that all were slightly off-centered and faced inward towards the courtyard. Furthermore, the size of the entrance, about 2 m wide, would also be comparable to those of other structures.

Structure 2 may also show signs of additional construction by the Maya to the southern wall. This statement comes from the fact that the southern wall's construction materials exhibit an inconsistency. It is apparent that poorer quality limestone was used to construct one segment of the wall as evidenced by the "melted" limestone sandwiched between the three stacked stones and the eastern end of the southern wall. If this is the case, then Structure 2 may have had two entrances in its initial building stage with the three stacked stones acting as a pillar. In this scenario, the "melted" limestone would have been an addition along with Structure 2's bench. Previous excavations showed that

the Maya living in Op. 7 were continually adding to their buildings, so this scenario seems reasonable.

Preservation

The preservation of Structure 2 is relatively poor when compared to other buildings in Op. 7. This lack of preservation is most evident in the walls of Structure 2. Excavations revealed that the highest wall stood about 90 cm high, with all other walls either too eroded to measure or standing well below this height. The southern wall seems to be the only one to have preserved largely intact and standing upright. Only here can there be seen the three levels of construction common throughout the area (Figure 4) as well as the rubble-filled inner parts of the wall sandwiched between cut stones. The only section that did not preserve well is the area of the believed entrance. More specifically, no stones marking the western side of the entrance were found; three large, stacked stones marked the eastern end. The rest of Structure 2's walls are severely eroded or leaning over, with much of their original stones found within the building including very large ones measuring up to 40 cm in diameter. These fallen stones had a significant impact on the plaster coating covering the floor and bench within Structure 2 as both possessed highly eroded areas and depressions where stones fell.

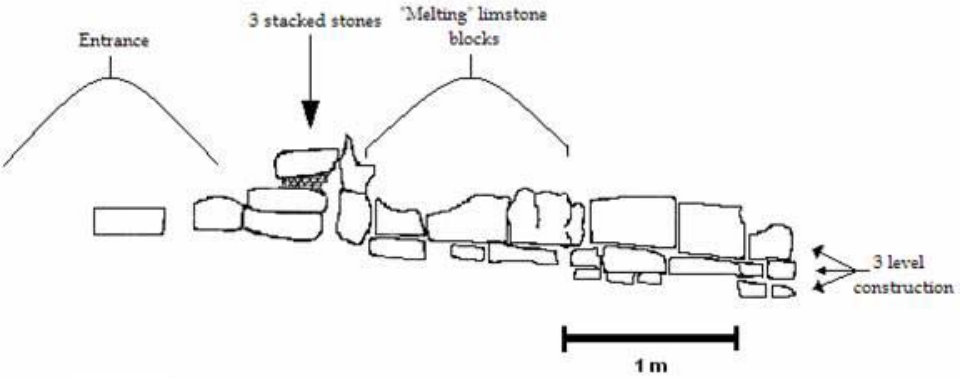

Figure 4. Profile drawing of Structure 2's southern wall.

The degree of preservation regarding Structure 2 is only interesting when it is compared with other buildings within Op. 7. No other structure is as badly eroded and "beat up" as Structure 2. Though this can be attributed to poor construction techniques in combination with naturally occurring destructive forces (e.g. tree growth), it is also possible that Structure 2 was intentionally destroyed by Maya. Some indicators of this act have already been mentioned, such as the low-standing, leaning and eroded walls as well as the presence of many fallen worked stones within the building. However, this argument remains largely conjectural and there is no definitive proof of Structure 2 being intentionally destroyed.

Final Comment

Sizable courtyard groups such as Op. 7 are a common feature across the rural landscape in the Maya lowlands during the Late and Terminal Classic. These courtyard groups have raised questions regarding the social and economic organization of Classic Maya society. Inhabitants of such groups most likely oversaw the production and extraction of critical resources necessary for the functioning of society. Preliminary mapping of Medicinal Trail has shown Op. 7 to be one of the largest courtyard groups within the community and it is likely that its inhabitants served a small administrative role, perhaps overseeing agricultural production. Nothing was found to suggest that the inhabitants of Structure 2 were specialists of any kind, and it is more than likely that its inhabitants formed part of an extended family.

BURIAL 2 AT GROUP A OF THE MEDICINAL TRAIL SITE: REPORT OF THE 2007 SEASON EXACAVATIONS

Kimberly T. Wren, The University of Tennessee at Knoxville
Angeliki Kalamara Cavazos, The University of Texas at Austin

INTRODUCTION

Excavations at the Medicinal Trial Site during the summer of 2007 were conducted by students, staff and volunteers of the University of Texas at Austin Field School and participants with the Programme for Belize Archaeological Project. The Medicinal Trial Site is located in the La Lucha uplands of northwest Belize in the Rio Bravo Conservation and Management Area. Group A consists of three contiguous courtyards oriented in a north-south direction and an outlying structure. This report discusses Burial 2, one of three burials exposed thus far, and associated with the Late Preclassic activity of the Northern Courtyard. Goals of the 2007 excavations were to achieve better understanding of the occupation history and function(s) of Group A.

BURIAL 2

Burial 2 is located in the Northern Courtyard, at the base and north of (temple/shrine) Structure 4. Upon discovery Burial 2 was thought to consist only of two Late Preclassic Sierra Red ceramic vessels sandwiching the cranium and part of the mandible of one individual. A large rock lay directly north of the burial. To its west lay the cut Late Preclassic plaster floor and small rectilinear platform mentioned by Hyde (2005).

Following the removal of the top Sierra Red vessel and the large rock to the north of the burial, the skull and associated postcranial bones were exposed (Figures 1 and 2). Based on observations of skull morphology and orientation it was concluded that the skeletal remains were human, facing west and oriented in a north-south direction. Late Preclassic Maya burials were often oriented in this manner (Saul and Saul 1997, Saul et al. 2007). The discovery of postcranial bones suggests that the burial did at one point contain an entire individual. *In situ* bone fragments from sections I-III (Figure 2) consisted of aligned vertebra and rib fragments, suggesting a primary burial. Bones 27-30 (Figure 2), also *in situ*, appeared to be distal forearm bones. Their location near the skull suggests that this individual was buried with flexed arms. Flexed burials were also noted in the Late Preclassic Maya skeletons from Cuello (Saul 1997).

ASSOCIATED MORTUARY ARTIFACTS

Besides the two Late Preclassic Sierra Red ceramic vessels found sandwiching the skull, a shallow layer of flakes directly under the lower vessel was found in association with Burial 2. A pot sherd, labeled I (see Figure 2), to the west and several other ceramic sherds in the soil surrounding and beneath the burial were associated artifacts (Figure 2).

Figure 1. Photo of Burial 2.

METHODOLOGY

Excavation of Burial 2 employed procedures established by Saul, Saul, and Thompson (2007). Human remains, upon arriving at the PfBAP lab, were separated from other artifacts and not washed. The skull was exhumed with its surrounding matrix. Postcranial remains were divided into five sections prior to being exhumed in matrix (Figure 2). The skull and postcranial remains were wrapped in foil, surrounded by foam, sealed in plastic tubs, and stored in the PfBAP lab. Associated Sierra Red vessels were also placed in tubs with foam and stored in the lab. Flakes and other pot sherds were stored in the lab in artifact bags. Soil excavated from the skull and within the vessels was stored separately from the surrounding soil matrix for future analysis of bone and plant remains.

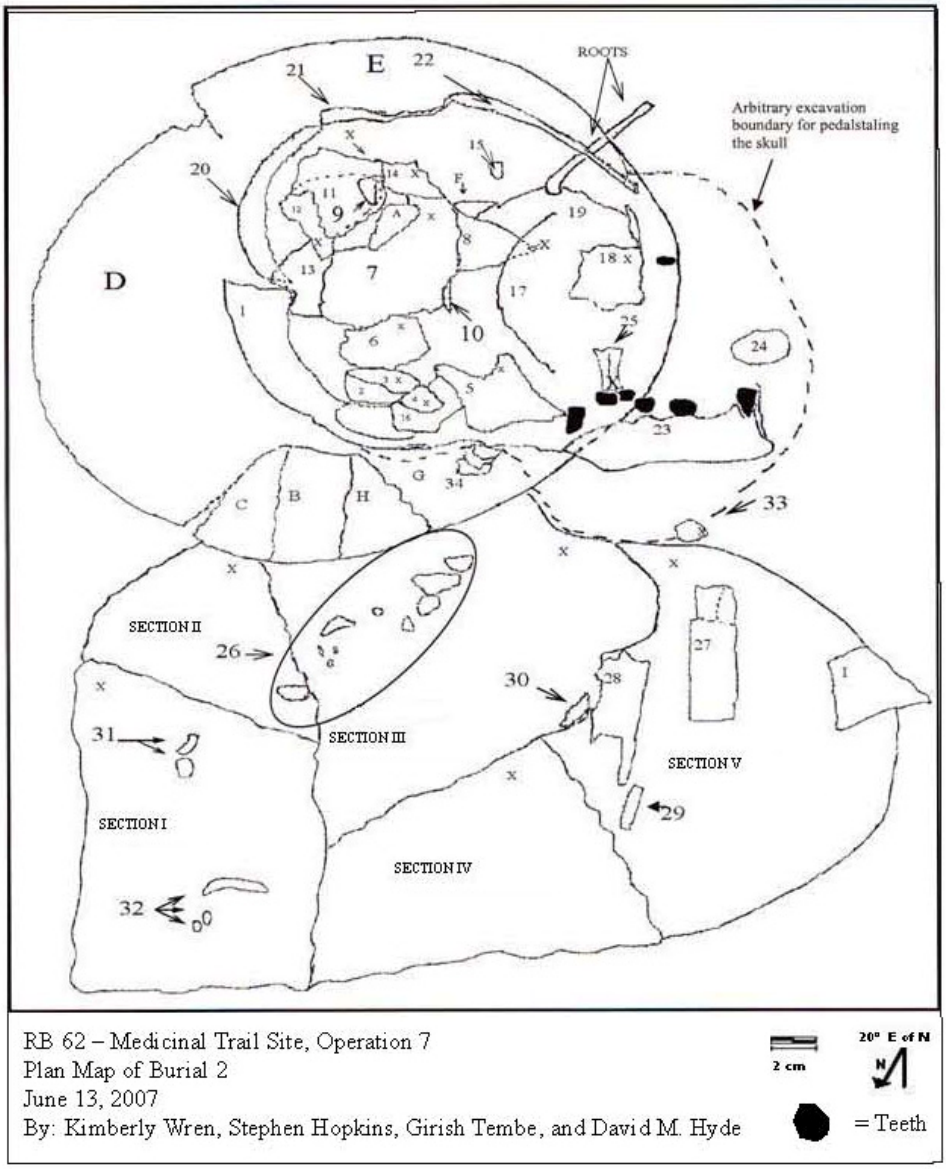

Figure 2. Plan Map of Burial 2 with numbered bones, lettered ceramics.

CHALLENGES

During the excavation of Burial 2 several challenges presented themselves. Roots penetrated bone and ceramic vessels, destroying some and moving others around. The

skull was the best preserved of all the skeletal remains. This was perhaps due to it being protected by the two Sierra Red ceramic vessels. Associated postcranial remains were in poor condition.

PREVIOUS EXCAVATONS OF ASSOCIATED BURIAL FEATURES

During the spring and summer of 2005 skeletal remains adjacent to and at a level consistent with Burial 2 were excavated in matrix and stored in the PfBAP lab. Not only did these remains also lie directly west of the cut Late Preclassic floor and rectilinear platform mentioned by Hyde (2005), but they too represented an incomplete skeletal assemblage. It is likely that these remains represent the rest of Burial 2. This hypothesis will have to be investigated further by the project osteologists during a subsequent field session.

DISCUSSION AND CONCLUSION

Burial 2 is one of three burial features discovered in the Northern Courtyard of the Medicinal Trail Site (see Cavazos and Wren this volume, Grazioso 2007). Demographic and pathological analyses of individuals from these burials during subsequent sessions will shed light on age and sex distribution as well as health status of Late Preclassic Maya at the Medicinal Trail Site. These data could then be compared to data from other sites in the Maya region in order to investigate synchronic and diachronic change in demography, health, and even burial practices during the Late Preclassic.

Skeletal remains in this report were not analyzed by the project osteologists. Seeing that the postcranial remains of Burial 2 were in poor condition, it is not until they are taken out of matrix and cleaned that they can be properly analyzed and confidently identified.

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PRELIMINARY NOTES ON A CIST BURIAL ASSOCIATED WITH THE LATE PRECLASSIC SETTLEMENT AT GROUP A OF THE MEDICINAL TRAIL SITE

Angeliki Kalamara Cavazos, University of Texas at Austin
Kimberly Wren, University of Tennessee, Knoxville

INTRODUCTION

Located between the Rio Bravo escarpment and the La Lucha uplands in northwestern Belize, the Medicinal Trail Site consists of multiple courtyard groups and landscape features. Group A has been identified as one of the two large formal courtyard groups encountered to this point at the site (Hyde and Atwood 2007). Excavations exposed occupation lasting from the Late Preclassic to the Late Classic for the Northern, Middle and Southern Courtyards (Figure 1). During the 2007 field season, the investigations focused in the Late Preclassic occupation of the Northern Courtyard. The cist burial discussed here is one of three burials, exposed thus far, and associated with the Late Preclassic activity of the Northern Courtyard. This report only provides prelude observations of the skeletal material and attempts interpretations only as an introduction to the burial customs of the Preclassic Maya occupants of the Medicinal Trail locality. The burials from the site of Cuello (as well as Altun Ha and Uaxactun), are used as a model of similar mortuary practices of the Late Preclassic Lowlands.

A CIST BURIAL IN THE NORTHERN COURTYARD

Three burials have been recorded so far within the Northern Courtyard of Group A. During the 2004 field season, excavations inside the round platform, that occupies the northern center portion of the courtyard, came across a secondary burial covered with sascab and embedded into the bedrock along with at least two ceramic vessels (Grazioso 2007). During the 2005 field season, and associated with the square platform of the courtyard immediately to the south of the round platform, a second burial was found with the skull resting between two lip-to-lip Sierra Red vessels (see Wren and Kalamara Cavazos, this volume). The third burial is the cist burial of this report and it was exposed during the 2007 field season.

A deliberately constructed pile of stones, a cairn (Figure 2), appearing to be forming a burial mound, was located in close proximity to the south end of the square platform and south of the location of three caches associated with the structure (Hyde and Atwood 2007). This pile of stones surrounded by dirt and construction fill was buried and plastered over. Bone fragments, identified at the time as cranial, were encountered on the north side of the pile. An earlier plaster floor (see conclusions) encircles the pile and evidently continues under it. Extending east of the pile three larger rectangular stones, possibly modified, may represent capstones and led to the assumption that we were dealing with a cist burial.

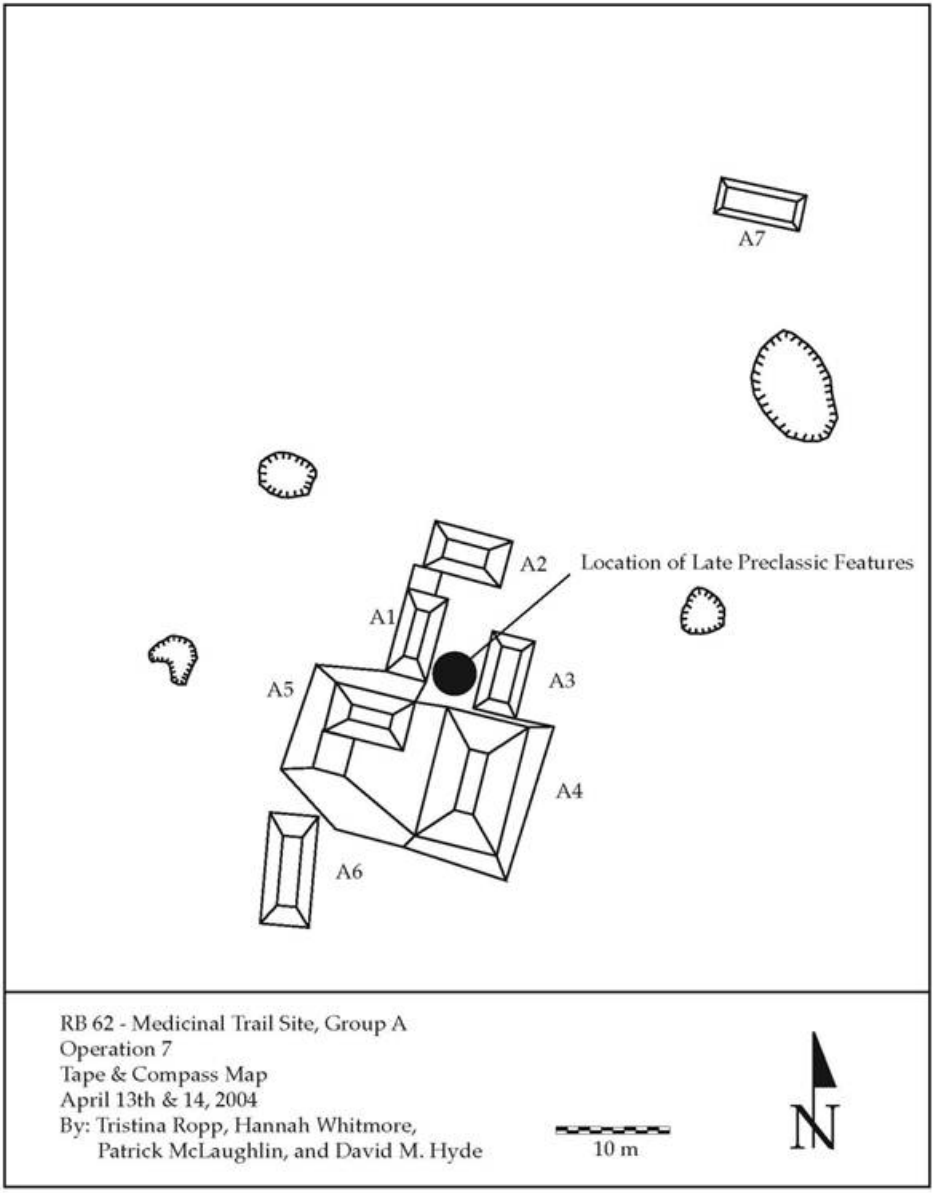

Figure 1. Map of Group A at the Medicinal Trail Site (adopted from Hyde and Atwood 2007).

Figure 2. The bottom of the cairn and plaster floor around it. Possible capstones to the east.

A cist burial can be found in both, soil and cobble fill contexts, and involve placement of large, usually flat stones as walls of the burial space; often the burial floor is a plaster layer (Saul *et al.* 2007). In this case, non-modified stones were noted as possible remnants of the cist walls; the modified larger stones may represent capstones that erosion and bioturbation, mainly root intrusion, caused to shift to the sides (Figure 3). Stones that seemed associated with the construction of the cist were left in situ during the excavation process. The expectation that this cist contained a "flexed" burial was confirmed, as the legs were folded up.

In detail, the skeleton of one individual is laying directly on the plaster floor, axially placed in a north-south direction (Figure 4 and 5). Cranial bone fragments rest to the north, and in close proximity to the right side of the head a marine shell was observed. Long bones of arms extend to both sides of the body without clear positioning of the arms and hands. What is apparent is the distal view of the left humerus suggesting that the skeleton appears to be prone, but the facing direction of the head is not observable. The

Figure 3. Resting on the plaster floor (after the skull was exhumed)

skull was excavated within the matrix and was send to the PfBAP laboratory for more proficient excavation during the next field session.

Unidentified bone fragments probably of the upper thorax lay in between the arms and below the skull. No other bones from the shoulder or chest were recovered. What is peculiar is the presence of a fragmentary lower thoracic vertebra (assumed by ground location); a fragment of neural arch was saved and it demonstrated non-fusion with the centrum rather than a break. Union of the two halves of the arch takes place posteriorly during the first and second year (Bass 2005). Fusion of the neural arch to the centrum of a lower thoracic vertebra begins around three to four years of age and progresses superiorly, completing fusion by five to six years of age (Baker, Dunbras and Tocheri 2005). Typically, vertebrae of adolescents (13 to 24 years) are characterized by the complete fusion of all the primary centers of ossification and an absence of development of the secondary growth centers (Steele and Bramblett 1988). Further study and analysis of the vertebra is intended while the stature of the skeleton suggests an older rather than early to late childhood. Bone fragments and a bone cluster are located immediately below the transverse plane and may correspond to bones possibly from the pelvic region.

Figure 4. Burial 3 in situ.

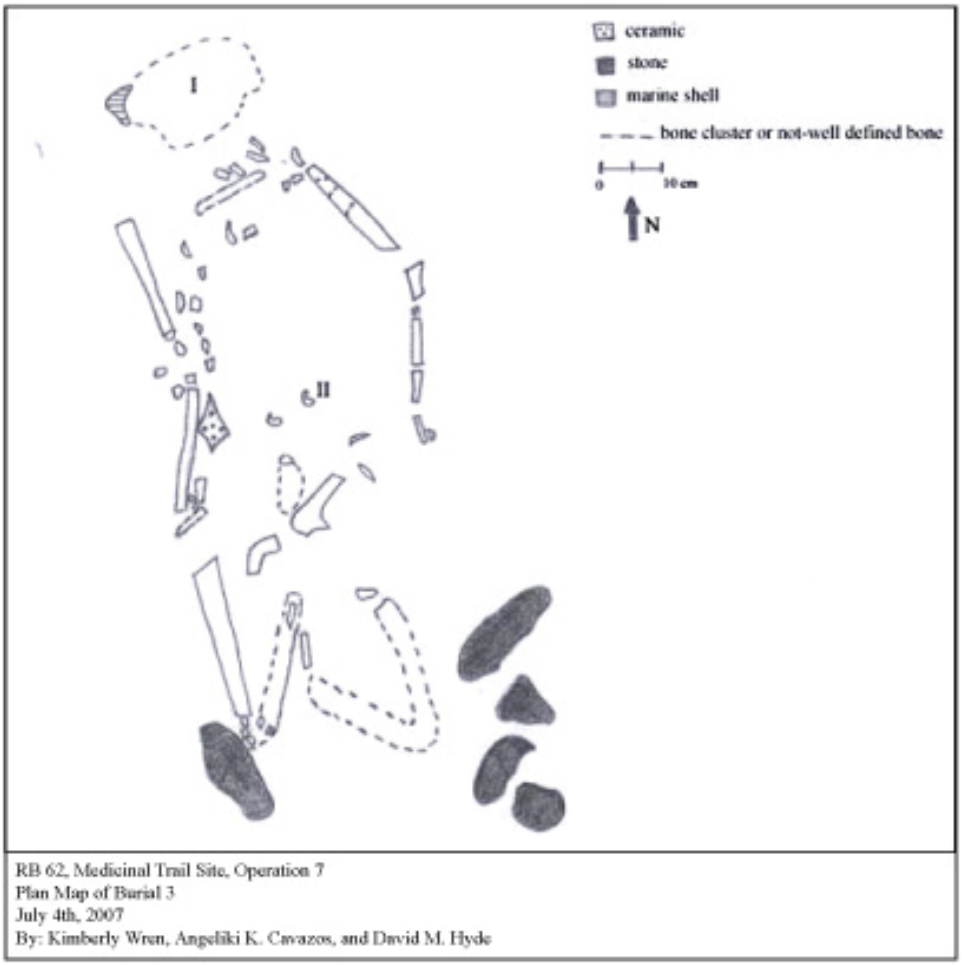

Figure 5. Plan Map of Burial 3 with (I) fragments of cranial bone, (II) fragment of vertebra.

The skeleton is interred in a flexed position, left leg crossing over the right leg, with arms extended at the sides. The left femur does not seem very fragmentary while the right leg bones are not very well distinguished. Unmodified stones that most likely belong to the cist walls border these extremities, particularly on the left side, were left in situ in order to delineate the burial space.

FIELD METHODOLOGY

Upon encountering the burial, step-by-step procedures for excavating, recording, and transporting human skeletal material were followed as outlined in the PfBAP Field Guide for Recovery and Documentation of Skeletal Remains (Saul, Saul, and Thompson 2007). Stones that may are associated with the construction of the cist were carefully removed after mapping and documenting in order to expose as much bone as possible. Soil removed from around the bone and from the cairn was screened through a fine screen (1/8 inch) and all bone fragments were packaged in foil and labeled with provenience information. The skull was excavated within the matrix wrapped in foil placed in tubs and stored in the PfBAP laboratory along with the vertebra fragment.

The excavation of the burial was not complete so protection of the exposed material was critical. The burial was carefully covered with foil, foam, palm fronds, tarp, soil, sticks, rocks, soil and soil with cobbles (backfill) and its location was marked.

LABORATORY METHODS AND FUTURE RESEARCH

Human remains upon arriving at the PfBAP laboratory were separated from other artifacts and were not washed. Identification of bones in this report were not made by the project osteologists; it is not until the bones are taken out of matrix, cleaned, and observed three-dimensionally in the lab can they be identified with certainty. Consequently, reliable identification of skeletal remains, sex, age, stature, as well as any pathological or traumatic ailments will have to be established at a later date by the project osteologists.

CONCLUSIONS

Excavations in the Northern Courtyard of Group A at the Medicinal Trail Site suggest two Late Preclassic construction phases (Hyde and Atwood 2007). Three caches were placed in the dry cobble fill between an earlier Late Preclassic floor as a termination offering when the round structure and Burial 1 along with the square platform associated with Burial 2 were being intentionally buried and plastered over with a second floor. Dirt and construction fill that loosely filled a hole in the later Early Preclassic plaster floor of the courtyard covered up the cist burial (Burial 3) south of the square platform. It is not clear if the cist was covered up simultaneously with the other features or placed later in a hole made through the second floor. Poor preservation of the upper floor over the construction fill made the pursuit inexplicable.

Maya burials placed or associated with structures are usually tied to important linage figures brought to a site when it was first settled and may have functioned as a way to legitimize claim and control of the land (McAnany 1995). Burials associated with features are evident at the site of Cuello (see map in Figure 1) where construction of platforms appears to have inspired the ritual interment of individuals while at residential areas family members are buried under and near houses (Saul J. Saul F. 1997). All Late Preclassic burials of Cuello come from ceremonial platforms, residential platforms, plaza

floors, and north platform construction associated occupation surface/fill layers Platform 34, the main ceremonial center at Cuello (Robin C. 1989).

The cist burial or Burial 3 represents the interment space and the skeletal remains of an individual at least partially flexed, oriented in a north-south direction in a north-east azimuth. The recovery of cranial along with postcranial bone and the alignment of the body support the interpretation of a primary type burial. Simple and cist graves are common in several Lowland sites such as Cuello, Altun Ha, and Uaxactun; and the flexed position is favored. Although a variety of grave goods characterizes the Late Preclassic mortuary assemblages of the sites mentioned above (Robin C. 1989), funeral furniture from Burial 3 are not many, apart from a marine shell (Figure 6) and an unidentified item of modified stone. Ceramic sherds were found within the cobble fill that cover the cist.

Hopefully the 2008 field session will provide us with more reliable indicators of age determination and sex differentiation for the individual of Burial 3. The apparent fragmentary and incomplete condition of the skeleton may place a difficult task of age or sex determination with precise certainty. Furthermore, we hope that methodical excavation, proper documentation and analysis by specialists will support further research and explanation relating to population composition, health studies, and several mortuary traits of the Late Preclassic Maya peoples of the site.

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MEDICINAL TRAIL SITE, GROUP B: REPORT OF EXCAVATIONS FOR THE 2007 SEASON

Deanna M. Riddick, The University of Texas at Austin

INTRODUCTION

The Medicinal Trail site is located in northwestern Belize in the Rio Bravo Conservation and Management area. Included within this site are courtyard groups, Group A and Group B (Figure 1). This report summarizes the 2007 excavation season at Group B.

PLAZA TEST PITS AT GROUP B, OPERATION 12

The 2007 season included a series of 1 x 1 m test pits in order to establish a chronology of the courtyard at Group B. Group B consists of a courtyard and four mounds, one of which being a pyramidal mound excavated by Lauri Thompson (see Thompson, this volume). Eight test pits were placed within the courtyard and behind two of the mounds surrounding the courtyard. Within this Op. 12 were Suboperations C, D, E, F, G, and H, which were conducted within the courtyard; while I and J were opened behind the southern and western mounds.

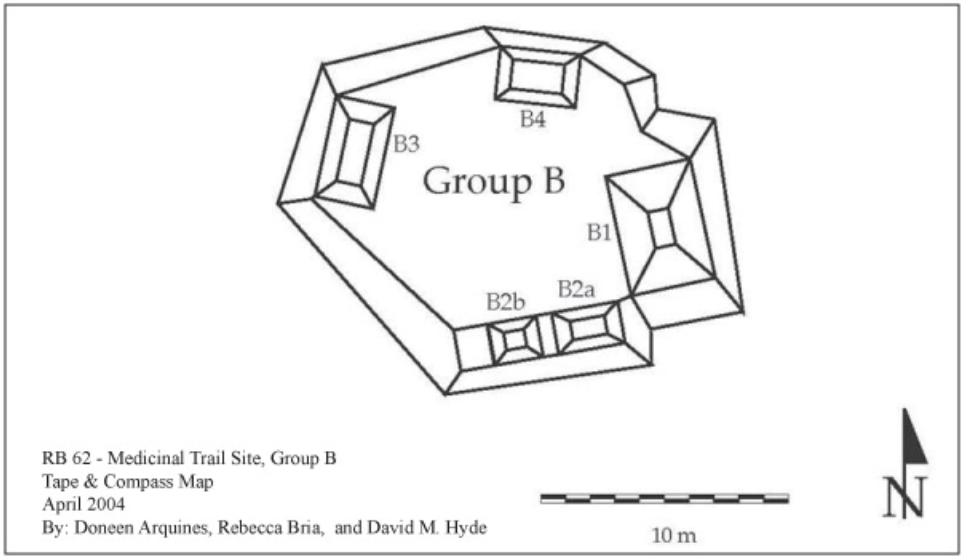


Figure 1. Map of Medicinal Trail Site, Group B (Modified from Hyde and Valdez 2007).

Operation 12, Subops C,D,E

Subops C, D, and E combined to form a 1 x 3 meter unit where each 1 x 1 meter unit was excavated individually. Subop C reached a depth of 51 cm below surface. A culturally

modified stone was exposed 21 cm below surface. The modified stone measured 49 cm in length and 35 cm in width.

Operation 12, Subop C

Stratigraphy:

I. The top layer consisted of dark brown soil 10 cm deep with several small root inclusions, but no fill. The soil transitions from dark to what appeared as light brown in the next strata. Artifacts recovered include Late Classic ceramic rim forms.

II. The second stratum, which reached a depth of 27 cm below surface, consisted of light brown construction fill comprised of flakes, ceramic sherds, small cobble fill, and decomposed limestone. The soil transitions from dry, light brown to a thick black, clay- like texture. Part of the culturally modified stone was found in this layer and completely exposed in Subop D. Artifacts recovered include a beveled plate rim and Achote Black rims.

III. The third stratum, measuring 5 cm in depth, consisted of a thick, black, clay-like texture with an increase in limestone and larger rock construction fill. There was an increase in ceramic sherds and a decrease in chert flakes. The test pit was terminated at 51 cm below surface. Artifacts recovered include and eroded basal flange and Late Classic plate forms.

Operation 12, Sub-op D

This 1 x 1 unit exposed sections of eight layers of strata, seven of which were construction fill. This test pit reached a depth of 1.18 meters below surface. The feature exposed in Subop C continued into this subop and was fully exposed. An additional culturally modified stone was exposed in the southwest corner of the unit. This stone was found at 44 cm below surface. A map of the north wall profile is shown in Figure 2.

Stratigraphy:

I. The first stratum, 5 cm in depth, consisted of brown humus soil with several tree root inclusions. A few small cobbles occurred in this stratum. Artifacts recovered included a number of lithic pieces and three ceramic sherds.

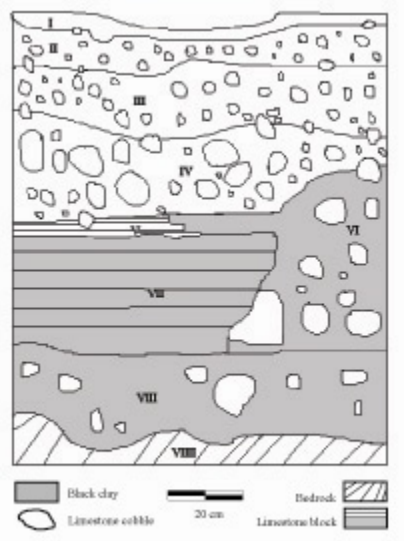
II. The second stratum, which reached a depth of 15 cm below surface, consisted of dark brown soil with an abundance of small cobble fill. A number of lithic pieces and a few eroded Late Classic ceramic sherds were recovered.

III. The third stratum, measuring 20 cm below surface, is composed of dry, light brown soil with a number of medium-sized rocks measuring 5-6 inches in width and a steady amount of tree roots and decomposed

limestone. Artifacts recovered include a large number of lithic pieces and a small number of Achote black ceramic sherds dating to the Late Classic period.

IV. Stratum four consists of a thick black clay–like texture with large rocks. A heavily weathered limestone rock extends through half the northern profile wall. The eastern wall profile was more compact with less cobble fill as opposed to the western profile, which had looser cobble fill. The feature exposed in Subop C has been fully exposed to display a complete culturally modified stone. Exposed also was an additional feature towards the southwest corner of the unit. This cut stone may indicate a semi-circular pattern due to its alignment with the other exposed features.

V-VIII. Strata six through eight, 50 cm thick and reaching 120 cm below surface, contains some large cobble fill with thick black clay and limestone. There was a possible feature of large cut stones running through the southwest corner curving toward the southeast corner and out of Subop D. The northwestern corner in Lot 6 (84 cm below surface) contained a high frequency of Sierra Red ceramics indicating a Late Preclassic period. Bedrock was reached at 118 cm below surface.



I. Dark brown humus
II. Dark brown construction fill
III. Light brown construction fill
IV. Gray construction fill
V. Limestone rock
VI. Black clay and limestone construction fill
VII. Black clay
VIII. Bedrock

Figure 2. Profile of north wall, Operation 12, Subop D.

Operation 12, Subop E

This 1 x 1 meter unit was opened to follow the feature exposed in Subop C and only reached a depth of 74 cm below surface. A series of culturally modified stones extended from the north wall of unit curving slightly to the northeast following a circular pattern. These were recovered at 50 cm below surface. Artifacts recovered include a small number of heavily eroded body sherds 6 cm below the surface and Sierra Red ceramic sherds 23 cm below surface.

Operation 12, Subop F

Sub-op F is located 4 meters west of Subop E. This 1 x 1 meter unit was placed on the elevated portion of the courtyard and reached a depth of 120 cm below surface. Figure 3 shows the stratigraphy of the east wall profile.

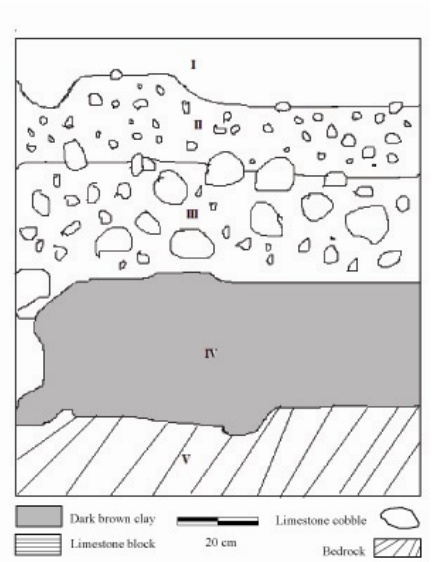
Stratigraphy:

I. Stratum I consisted of humus, dark brown soil with a large amount of tree root inclusions. This layer reached a depth of 20 cm below surface. There's evidence of decomposed limestone transitioning into the next strata. Artifacts recovered were a small number of lithic pieces and a very small number of ceramic sherds.

II. This stratum contained numerous eroded limestone blocks and cobbles on the surface. Present also were numerous roots ranging in measurement from 1 mm – 2 cm in diameter. Possible remains of a platform surface was evidenced by surrounding space, which shows the outline of a platform adjacent to a mound on the western side of the courtyard. The soil was light brown and several large roots have penetrated the "surface" and appear to have disturbed rock placement.

III. This stratum was 25 cm in depth with large rocks and large limestone pieces, which were observed at the termination of Stratum II. After being sketched, some of these rocks were removed in order to continue excavating below and the ones that remained (the removal of some stone would have compromised the profile). The soil was grayish brown with large amounts of limestone, most likely eroded from the in-place blocks of limestone, which showed signs of heavy erosion. In addition, large roots (2 cm in diameter) extended from the western part of the unit, running north to south for one meter. These were carefully removed. Artifacts recovered were a small number of ceramic sherds and a small number of lithics, including one biface. Dating for the ceramics has yet to be determined.

IV. Stratum IV contained thick, dark brown clay with some small limestone inclusions and large chert. This level was 40 cm thick and 120 cm below surface. Few artifacts were recovered. Burned chert and limestone were observed in this stratum. Bedrock was found below this layer. Dating of artifacts has yet to be completed.



I. Humus
II. Light brown construction fill
III. Light brown construction fill
IV. Dark brown clay
V. Bedrock

Figure 3. Profile of east wall, Operation 12, Subop F.

Operation 12, Subop G

This 1 x 1 meter unit was located two meters east, three meters north of Subop D and exposed sections of six strata. This test pit reached a depth of 130 cm below surface and was located northwest of the temple at Group B. Figure 4 shows the stratigraphy of the east wall profile.

Stratigraphy:

I. Stratum I, reaching 10 cm below surface, consisted of dark brown humus with a scattering of roots, some gravel, a lot of land snail shells, and limestone pebbles. The soil appeared very moist and clumped together easily. Transitioning into the next layer the soil was still dark, but a little loose. Artifacts recovered were a small number lithics.

II. The second stratum consists of light brown dry soil containing small cobble fill, some root inclusions and decomposed limestone. A large ceramic sherd was recovered in the southeast corner. Ceramic identifications have yet to be determined.

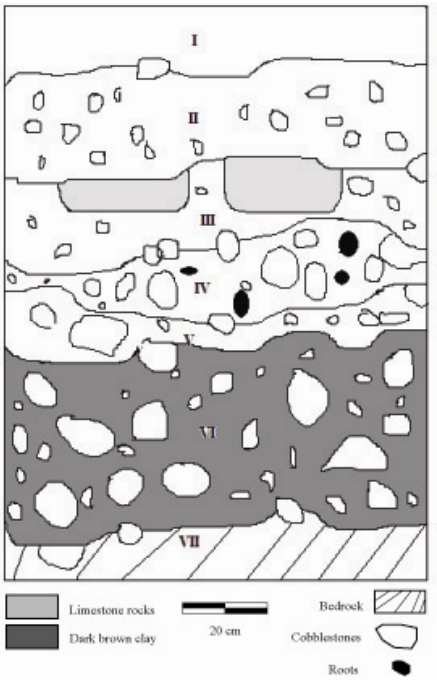
III. Stratum III consisted of light brown soil and a small number of cobbles with evidence of eroded limestone. This unit contained two large culturally modified stones protruding from the east profile wall identified as possible remains of an eroded surface. Artifacts recovered include a significant amount of Sierra Red ceramic sherds, indicative of the Late Preclassic period and some lithics.

IV. Stratum IV is 30 cm thick reaching 106 cm below surface and contains dark brown soil with a sandy texture. There were medium size stones

and large rock fill with several root inclusions and a medium-size rock protruding from the eastern corner of the profile wall. Artifacts recovered in the strata include a large number of ceramic sherds, lithics, and a piece of obsidian. Dates for the artifacts have yet to be determined.

V. Stratum V consists of construction fill containing dark brown soil and large rocks ranging in size from 9 cm long x 8 cm wide to 11 cm long x 6 cm wide. The northern and eastern profile walls contain loose cobble fill as opposed to the southern profile wall which contains compacted soil fill.

VI. Stratum VI is 41 cm thick contains a thick black clay-like texture and cobblestones ranging in size from 5-20 cm in diameter including some eroded limestone. Fewer artifacts were recovered at this depth. Bedrock was reached at 127 cm below surface.



I. Dark brown humus
II. Light brown construction fill
III. Light brown construction fill
IV. Light brown construction fill
V. Dark brown construction fill
VI. Dark brown clay construction fill
VII. Bedrock

Figure 4. Profile of east wall Operation 12, Subop G.

Operation 12, Subop H

This 1 x 1 meter unit is located in front of the west mound in the courtyard. Reaching a depth of 197 cm below surface, this test pit exposed sections of six strata and then bedrock. Artifact amalysis from this subop has not been completed.

Stratigraphy:

I. Stratum I contained humic, dark brown soil with a large number of root inclusions and a small amount of pebbles. This layer reached a thickness of 10cm and reached 24 cm below surface. The following layer appeared to be construction fill with some limestone, some larger rocks, and ceramics.

II. Stratum II contained lighter brown soil with flecks of limestone and an increase in cobblestone and pebbles. This layer reached a depth of 46 cm below surface and a thickness of 6 cm. Artifacts to be recovered include a small number of lithics and a large number of ceramic sherds.

III. Stratum III consisted of light brown soil, decomposed limestone and construction fill. The lot was terminated because the next layer appeared to have large rock fill (12-16cm in diameter) and are tightly packed together. This layer sloped downward from north to south reaching a depth from 50-65 cm in the eastern profile wall.

IV. Stratum IV contained light brown soil and construction fill with multiple stones and cobbles. An architectural feature was uncovered on the eastern side of the unit with shaped limestone rocks. The west wall profile is filled with chert and cobble. The stones range in size from 25 x 20 cm to 15 x10 cm. These rocks were left in place and worked around. This lot reached a depth of 83 cm and a lot thickness of 18 cm.

V. Stratum V contains gray soil with cobble fill. Large pieces of burned limestone were found throughout the stratum. Several large limestones from the layer above were removed in order to continue to dig to bedrock. There was a concentration of ceramics found layered on top of each other in the southeast corner of the unit. This layer reached a depth of 149 cm below surface and a lot thickness of 27 cm.

VI. Stratum VI contained thick black soil with clay-like texture. There were a small number of limestone flecks throughout this layer and a small number of ceramics and lithics recovered.

VII. Stratum VII consists of construction fill with soil that has a sandy-like texture. In the eastern profile wall there is a noticeably thick layer of limestone. Artifacts to be recovered include a small number of ceramic sherds and a small number of lithics. This layer reached a depth of 180 cm and a total thickness of 32 cm.

VIII. Stratum VIII contains thick, black soil with a clay-like texture, decomposed limestone, and a small number medium sized stones. This layer was terminated upon reaching bedrock at 197 cm below surface.

Operation 12, Subop I

This 1 x 1 meter unit was located behind the western mound at Group B. This unit exposed sections of three layers of strata. This test pit reached 74 cm below surface with no features exposed. Artifacts from this sub-op have yet to be dated.

Stratigraphy:

I. Stratum I consisted of wet, dark brown, humic soil containing small root inclusions. This lot reached 16 cm in depth and a thickness of 5 cm. Artifacts recovered included one rim found very close to the surface of the east side of the unit. A small number of lithics and a small number of ceramic sherds were recovered.

II. Stratum II consisted of thick, black, wet, clay and limestone cobbles ranging from 5 -7 cm in diameter and several root inclusions. The wet soil and frequency of artifacts may suggest that the artifacts from this unit are the result of construction fill, which may have been washed down from the mound.

III. Stratum III contains thick, dark, wet, clay with limestone flecks and small cobbles of limestone and chert ranging 4-7 cm in diameter. The north and west profile walls both contained thick black compact clay. Artifacts recovered included a small number of lithics and a small number of ceramics. Bedrock was reached at 74 cm below surface.

Operation 12, Subop J

This 1 x 1 meter unit was located behind the southern mound at Group B. This unit exposed sections of five strata. The test pit reached a depth of 104 cm before hitting bedrock. Artifacts from this unit have yet to be dated. Figure 5 shows the stratigraphy of the north wall profile.

Stratigraphy:

I. Stratum I, which was 7 cm thick, contained dark brown, soft soil of the humus layer with large amount of roots present. There were no artifacts recovered in this lot.

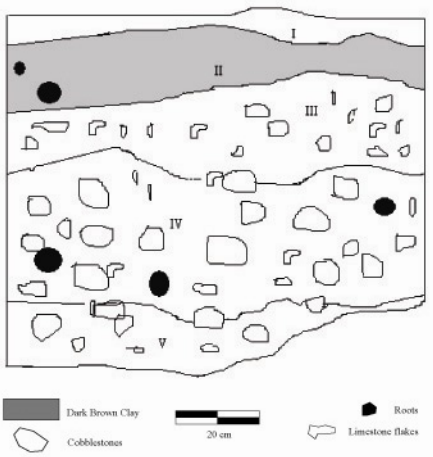
II. Stratum II consisted of dark brown soil, with a clayey texture. Numerous root inclusions were present in this layer. This stratum ended due to the observance of soil change and limestone in the next layer. The occurrence of limestone could indicate that bedrock would be revealed in the next lot. Artifacts recovered include a small number of ceramic sherds and a small number of lithics.

III. Stratum III contains dark brown soil and limestone cobbles, pebbles and both small and large root inclusions present at the surface of the layer. There were two large root inclusions extending from the eastern and western walls of the unit. Artifacts recovered included a small amount of ceramic sherds and a small number of lithics.

IV. Stratum IV consisted of light gray soil with a large amount of limestone and chert cobbles and a decreased amount of organic inclusions.

Artifacts recovered included a small number of lithics and a small number of ceramics.

VI. Stratum V contained tightly packed fill material consisting of limestone and chert cobbles and pebbles. Soil was a light gray color. The lot ended due to encountering possible bedrock surface. It is not certain if what was being observed was bedrock due to its physical characteristics. It was soft, suggesting an eroded bedrock surface. However, it abruptly dropped off in the northeast section of the unit with fill like material below, which left open the possibility that the drop off in the limestone is the result of possible quarrying. A large number of land snail shells were observed throughout the excavation of this lot.



I. Humus
II. Dark brown clay
III. Dark brown clay construction fill
IV. Light gray construction fill
V. Light gray construction fill

Figure 5. Profile of north wall, Operation 12, Subop J.

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PRELIMINARY REPORT ON GROUP B, OPERATION 12 OF THE MEDICINAL TRAIL SITE*

Lauri McInnis Martin, The University of Texas at Austin

INTRODUCTION

The Medicinal Trail site is located in northwestern Belize in the Rio Bravo Conservation and Management Area approximately 6 to 8 km east of La Milpa, the third largest archaeological site in Belize. The site is bounded by the Rio Bravo Escarpment in the east, and the La Lucha Uplands to the west. It consists the Turtle Pond excavated in 2004 (Chmilar 2005), a few formal courtyard mound groups, numerous informal mound clusters, and numerous associated landscape modifications including terraces, depressions, and linear features. Original excavations of the Programme for Belize's tourist "Medicinal Trail" were conducted in 2002 in two independent investigations of the mounds (Ferries 2002) and terraces (Farnand 2002). Group A, a contiguous group of three formal courtyards, was discovered in 2004 and has had continuous excavations under the direction of David Hyde. Group B (Figure 1), also discovered in 2004, is a large courtyard group consisting of four, possibly five, formal mound structures (Hyde 2005, Hyde et al 2006). This report is a short summary and explanation focusing on the excavations at Group B carried out during two summer sessions of the 2007 University of Texas at Austin Field School.

LOCATION AND DESCRIPTION

Group B is located approximately 200 m northeast of Group A. Found in 2004 and mapped in 2006, the formal group appears to be built on an artificial platform with the mound structures organized around, not on, the platform. Located to the east of the group are numerous depressions, linear berms, and what appear to be various water management features (Hyde and Valdez 2007). The formal courtyard consists of four mounds, situated in the cardinal directions with the eastern structure (B-1) being the largest. This mound appears to be a pyramidal temple structure. There is a major looter's trench penetrating the front and center the mound with extensive looter's debris located to the left and right of the trench on the west side of the structure. There is a tree fall on the top, east face of the structure that has created a significant amount of disturbance. The south structure is long and from surface indications is possibly supporting two structures (B-2a and B-2b). It may also be that there were originally two structures and with collapse, they appear as one. It is thought that this structure served a civic function with relation to the temple structure; however, these observations are mere speculation and will require excavations to be definitive. The structures on the west and north boundaries of the courtyard are likely residential (B-3 and B-4). Inside the courtyard are numerous

* A version of this paper was previously published in the Report to the Institute of Archaeology, Belmopan, Belize.

holes and a large (approximately 2 m in diameter) depression. Most of the holes appear due to dead *escoba* palm trees, and the depression is expected to be the result of collapsed limestone bedrock. Again, however, it will not be conclusive without excavations.

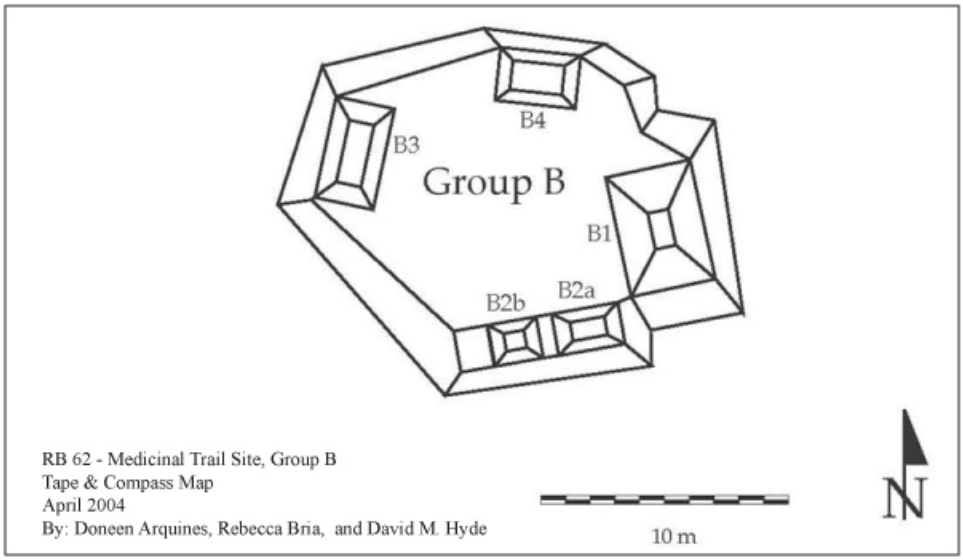

Figure 1. Tape and Compass map of RB 62, Group B with structures numbered.

OBJECTIVES

The proximity of the formal groups A and B of the Medicinal Trail site present an opportunity to examine the validity of the hypothesized proximal extended family model over a significant occupation period – based on the lengthy occupation of Group A (Hyde 2005, Hyde et al 2006). Goals of the 2007 field season include clean up of the looter's trench located in the eastern structure, removal and examination of extensive debris located in the trench and immediately outside the trench on the west face of the structure, the creation of profile and elevation maps of the trench and mound, respectively, and the establishment of a clear occupation history.

EXCAVATIONS

Excavations during the 2007 season were undertaken at two locations in an effort to assess the chronology of Group B, and if possible determine relatedness to Group A. A detailed description of the op will follow in a more complete report. The forthcoming report will include descriptions of the subops; their sizes, locations, and stratigraphy. It will also contain all maps pertaining to Group B, as well as a more thorough summary and discussion.

PRELIMINARY SUMMARIES

The looter's trench in structure B-1 was cleaned and profiled, and the debris was removed and examined. Preliminary ceramic evidence reveals possible occupation or visitation from the Late Preclassic to Postclassic. After mapping the north and south walls of the trench, it was decided to excavate a unit in the trench to bedrock. At present there are five floors representing at least five construction episodes. A unit was also placed on the western face the structure, north of the trench line. The intention was to excavate this unit to bedrock. These excavations are unfinished and preserved to resume for the summer 2008 field season.

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REPORT OF FIELDWORK AT OPERATION 11, MEDICINAL TRAIL SITE: 2007 FIELD SEASON

Jason M. Whitaker, The University of Cincinnati

INTRODUCTION AND GENERAL DESCRIPTION

This report is a preliminary analysis of excavations conducted over a four day period at Operation 11, Medicinal Trail site in June, 2007. Operation 11 is located on a gradually southeast-sloping surface, at an approximate distance of 90 m from Operation 7, with a decrease in elevation between these two operations of 6.5 m (Whitaker 2007). The report produced from archaeological investigations in the 2006 season characterized this operation as an isolated mound. With the information obtained this season Operation 11 can best be classified as an informal domestic unit (Ashmore 1981), consisting of several other structures.

The purpose of this fieldwork was to address those objectives not completed in the 2006 season, such as the definition of patio width (Whitaker 2007). In addition, the space around the mound was investigated with the purpose of understanding household activities (e.g. the production and consumption of items). Integral to this pursuit was the necessity of understanding natural processes occurring within this zone and their effect on the archaeological record at Operation 11.

Excavation this season was conducted primarily through posthole units. These units extended outward from the southern and eastern sides of the area excavated in 2006 (Whitaker 2007). In addition, tape and compass maps were made of four possible cultural features south and east of the mound investigated last season.

METHODS

The methods used this season differed little from those used in 2006 (Whitaker 2007). Vertical and horizontal control was maintained through the use of datum points and the operation grid. The operation grid was based on the cardinal directions. Mapping points were taken at 2 m intervals west and south from the 100/100 point. From Datum Point 2 (94S), an additional westward line of points was taken, along with two lines of points at the angles of 68º and 109º west. The points taken from Datum 2 were likewise at two meter intervals.

Seven datum points were established in the 2006 season. Datum 6 (96S) was the only one of these datums used in 2007. The 2006 datum points, with the exception of Datum 6, were at too great a distance from the new units to be of practical use (Figure 1). Datums 8, 9, and 10 were established to maintain accurate vertical measurements. Datum 8 was located at 88S, and placed directly on the ground surface. Datum 9 was located to

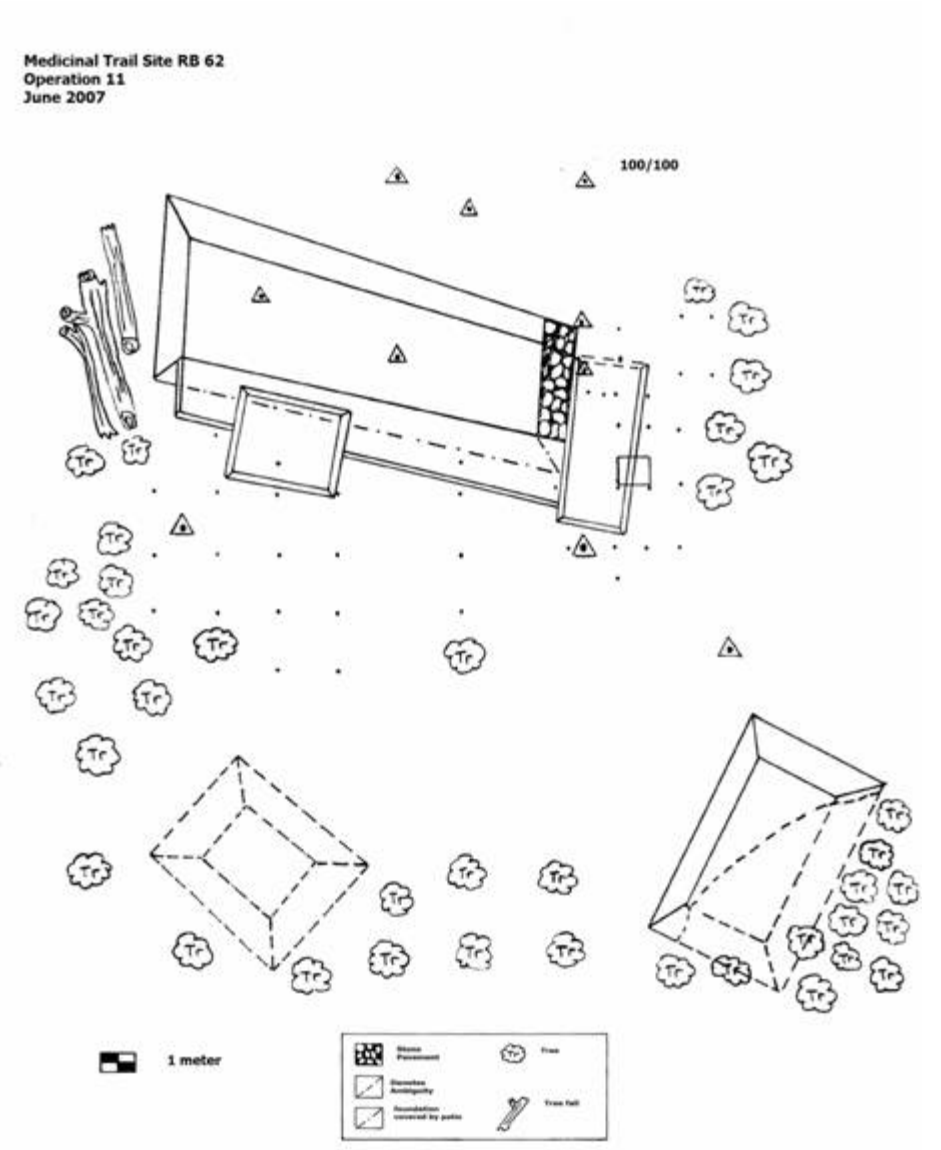

Figure 1. Operation 11 area map

the southeast of Datum 8 at 85.5S/95E, with a height of 85cm above surface. Datum 10, was located at 89S/87W, with a height of 1m above surface.

Mapping was a critical aspect of the field strategy this season. Four tape and compass maps made were made. It was shown through the creation of these maps and excavation data, discussed later, that the original interpretation of Operation 11 as an isolated mound was incorrect. The mound excavated in 2006 is referred to in this report as Mound 1 to avoid confusion with mounds mapped in the 2007 season. Two of these mounds were difficult to detect on the surface and neither exceeded 15 cm in height. The mound extending from the eastern side of the patio (Mound 2) measured approximately 6 m in length and 2 m in width. The length measurement was based on information gathered from surface characteristics, posthole units, and a single 1 x 1 meter unit. Surface characteristics were not that helpful. After 1.7 m northward the surface characteristics of the mound were no longer visible. Postholes units showed that the length measurement was most likely 6 m. Due to the uncertainty of this measurement the northern termination point of Mound 2 is represented by dashed lines (Figure 1). The width of this feature was visible in its entirety on the surface and is thus represented on the map with solid lines.

The feature protruding from the southwest area of the patio (Mound 3) was clearly definable through surface characteristics (Figure 1). Its basic dimensions could be seen through observation of the ground surface. Mound 3 was square in shape and measured 3.24 x 3.71 m. Excavation around this mound was minimal, consisting of two posthole units. The purpose of the units placed around this mound was not to determine structure function, but simply to test the proposition that Mound 3 was indeed cultural and not some sort of natural formation.

The remaining two mounds to be added to the map of Operation11 were located southwest and southeast of Mounds 1, 2, and 3. The mound on the southeast side (Mound 4) lay at a distance of 2 m from Datum 9, oriented 202° degrees east of north. The physical appearance of Mound 4 would suggest that it is a cultural formation as evidenced by its rectangular shape and uniform height. However, it is at the same time ambiguous in that over half of its southern section is missing. This missing section is represented by dashed lines on the map (Figure 1). The most likely cause for the absence of this section of Mound 4 is natural processes, such as a tree-fall. It was noted during the mapping operations that numerous trees were abundant in the vicinity of Mound 4 as can be seen from the area map of Operation 11 (Figure 1). More importantly however, was the presence of numerous bowl shaped depressions, which are known to occur when tree-falls happen (Schiffer 2002; Pyddoke 1961). This interpretation, by necessity, must remain tentative. No investigation beyond mapping and visual observation was conducted.

The mound on the southwest side of the operation (Mound 5) was much smaller and roughly square in shape. It was located 8 m southeast of Datum 10, oriented at an angle of 130° east of north. The classification of this mound as a cultural or natural formation is not clear at this time. A compelling argument, based on appearance alone, could be made for either case. For this reason, and the lack of any supporting data, Mound 5 is represented on the map with dashed lines to indicate its ambiguity (Figure 1).

The primary method by which fieldwork was carried out this season was through the excavation of 40 posthole units. These units were standardized to a 30 centimeter diameter. The exception to this rule was a single posthole unit (Suboperation BG), which was widened to a 50 centimeter diameter. The purpose of this deviation was to accommodate a particular need of the excavation process, discussed later. A single 1 x 1 meter unit was excavated with the intention of exposing a structural edge. Secondary objectives of this unit were to better understand construction methodology, and artifact association with Mound 2. Of interest also, but not entirely visible with posthole units, were soil characteristics and natural processes occurring outside the area of Mounds 1-3.

Due to time constraints and the physical limitations imposed on archaeological investigation at Operation 11 only the eastern and southern sides of the operation were investigated this season. The north side of the mound was deemed too deep as evidenced by the excavation of Suboperation A (Whitaker 2007) to be efficient for posthole units. The western side of Mound 1 was likewise avoided. This area was plagued by numerous large tree falls and associated brush piles (Figure 1). The effort involved in clearing this area would have consumed far too much time.

All posthole units were placed in reference to the southern grid line. In the eastern section of the operation units began at 96S and were placed south, east and west of this point. Placement of units south of Mound 1 covered 13 m of space from east to west, and 6 m of space north to south. As was the case with the eastern side of Mound 1, units on the southern side were placed in reference to the south grid line.

DISCUSSION OF SUBOPERATIONS

Suboperations in this report are discussed in terms of their association with a particular feature or location and not necessarily in order of excavation. This section is divided into four subsections based on location or relevance to a particular feature. The first subsection deals with investigations of Mound 2. The second subsection discusses those suboperations use in the investigation of the space east of Mound 2. The third subsection deals with the space south of the patio area. Finally, the fourth subsection discusses those units utilized in the investigation of Mound 3.

Suboperations BE, W, BF, AI, AH, V, BG, BH, AE, AF, and Y

The first suboperation to be discussed in this subsection is suboperation BE. It was the only 1 x 1 meter unit excavated this season, and was therefore critical in addressing the

issues mentioned in the introductory section, such as the soils characteristics. Integrally linked with this pursuit, and essential to any archaeological endeavor, was the need to gain stratigraphic control over the area. This was achieved through the excavation of this unit.

Suboperation BE was located at 90S/99E. All vertical measurements were taken from Datum 6. Excavation was conducted in three lots. Lot 1 was excavated to a depth of 142 cm below datum, with a total lot thickness of 9 cm. Soil consisted of a thin humus layer (approximately 1 cm), followed by a layer of darker colored soil with a clayey loamy texture and sub-angular blocky structure. A small amount of limestone pebbles and gravel were observed in this lot. Roots were present in large quantities, with varying degrees of thickness. The majority of these roots were located in the humus layer and seemed to decrease with depth.

An additional observation made was that numerous pieces of chert littered the lower elevations of the lot. These stone extended from the western edge to approximately the center of the unit. There was observed to be three average sizes of stones. The largest size averaged 312 x 20 x 30 cm, the mid-size stones averaged 8 x 15 x 16 cm, and the smallest average size was 8 x 8 x 8 cm. The largest of these stones were located near the center of the unit. The mid-sized stones were observed to be west of the larger stones and at a slightly higher elevation. Finally, the smallest sized of stones were primarily to the west of the mid-sized stones, and at a slightly higher elevation.

The largest sized stones were solidly in place and therefore, left for further investigation. Most of the mid and small sized stones were loose and removed from the soil. Before removal the position of all stones was sketch mapped and photographed.

Lot 2 was located in the space east of the largest class of stones. From the northeastern corner of the unit the lot extended 17 cm west. From the southeastern corner of the unit the extended 36 cm. The soil of this lot was similar to that observed for Lot 1 in terms of color, texture, and structure. However, a considerable increase in limestone inclusions was noted, with an increasing frequency of limestone pebbles and cobbles with depth. This lot was excavated to a depth of 184 cm below Datum 6, with a lot thickness of 13 cm. Excavation of the lot ended upon reaching the bedrock surface. No large stones as seen in Lot 1 were encountered in this lot. The absence of the largest class of stones suggests that the stones left in place from Lot 1 represent the structural edge of Mound 2.

Lot 3 was the remaining space in the western section of the unit. Excavation proceeded to a depth of 143cm below Datum 6, with a lot thickness of 9 cm. Many of the large stones initially seen in Lot 1 became loose and were thus removed. The soil of Lot 3 was similar to that of Lot 1, but had fewer roots and an increase in the size and frequency of limestone inclusions.

The excavation of Lots 2 and 3 allowed for a clearer understanding of the validity of Mound 2 as a cultural feature. In addition, the construction methodology of Mound 2 became clearer. From these excavations it can be determined that this structure was built upon the bedrock surface using large chert blocks to provide a solid foundation, and then built up in a step-like fashion with increasingly smaller pieces of chert. Only two of the foundation stones were seen in this suboperation, the largest of these foundation blocks measured 35 x 40 cm (Figure 2), with a height of this foundation measured at 20 cm.

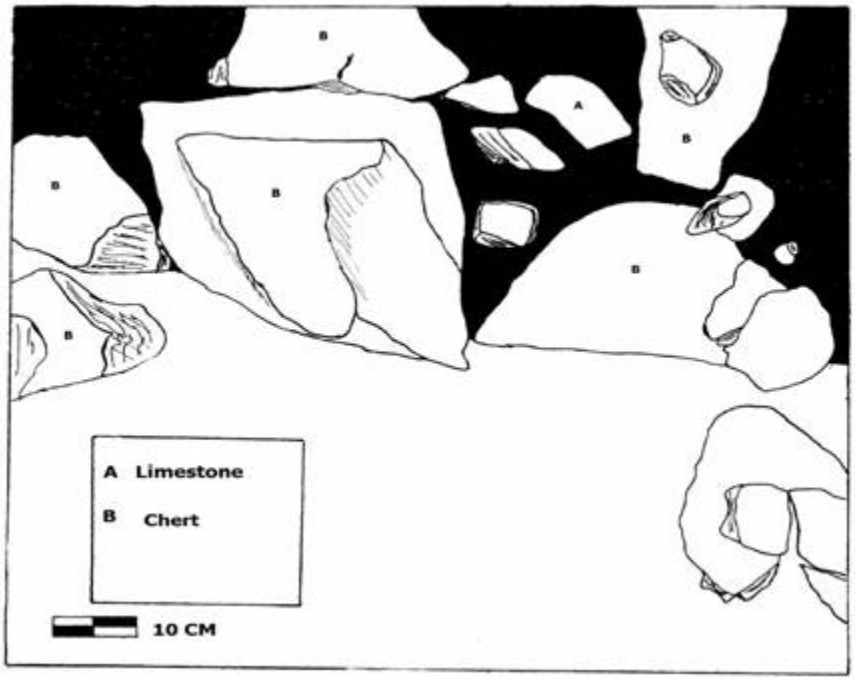

Figure 2. Suboperation BE Structural Foundation.

The soil of Suboperation BE was representative of the soil seen in all excavation units this season. Information concerning soil characteristics was taken from Buol et al. (2003), and can be summarized Suboperation BE as follows. Three soil layers were defined on the basis of color and amount of limestone inclusions. The first soil layer (Lot 1) was a dark brown color and definitely a humus layer. Observations made during excavation showed that it had an abundance of root and organic inclusions. Organic inclusions primarily consisted of decomposing leaf material. A field test showed it to be most likely hemic in composition. Limestone inclusions made up a small portion of the materials within this soil layer. Immediately following the humus layer, and marked by a clear boundary, was a layer of dark brown soil layer (Lot 2) with a clayey/loamy texture. The structure of this soil was sub-angular blocky. It was noted that root inclusions

decreased dramatically in this layer as did organic inclusions. An increase in limestone inclusions was observed however, and made up a substantial portion of the unit. These inclusions were on the whole of the gravel and pebble size with a few cobble sized stones noted during excavation. The final soil layer (Lot 3) was separated from the second layer by a difficult to detect wavy boundary, but identical in texture and structure to Lot 2. The factor that separated these two soil layers was a marked increase in the size and amount of limestone inclusions present within the matrix. In addition, there were fewer roots seen in this final soil layer (Figure 3)

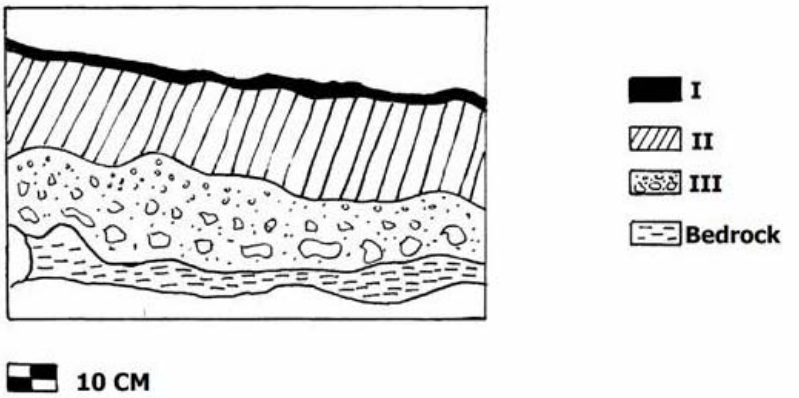

Figure 3. Suboperation BE East Soil Profile.

Artifacts collected from Lot 1 consisted of ceramics, lithics, and obsidian. Ceramics were found in rather large quantities. Three-hundred ten body sherds and six rims/bases were collected, none of which could be identified. Ninety-two pieces of debitage and two tools were also collected in this lot. One of the tools was a large triangular biface of the type usually associated with agriculture (David Hyde, personal communication 2007). The second tool collected was of more interest. It was small, rounded on its sides, with evidence of hafting on one end, and bifacial chipping on the other. This tool has been interpreted as a bifacial celt (David Hyde, personal communication 2007). It has been suggested that it may have been utilized as a woodworking tool (Fred Valdez Jr., personal communication 2007).

In Lot 2 ceramics and lithics were found in smaller amounts than Lot 1. Fifty-four body sherds were collected. Types identified by project ceramicist Lauren Sullivan included Cayo Unslipped, red-slipped (Classic Period), unnamed striated, and Tinaja Red. Lithics were fewer in number and consisted of 24 pieces of debitage. Obsidian, in the form of a small blade fragment was also collected. Burned limestone was also observed, consisting of approximately 5% of the materials excavated.

Lithic and ceramics pieces were removed from Lot 3. Ceramics were by far the most abundant artifact class with 67 body sherds and four rims/bases collected. These ceramics were identified as Cayo Unslipped, Gunshot, Striated and Unstriated. Lithics in this lot were the same as Lot 2.

Suboperation W (92S/98E) was excavated with the purpose of locating the eastern structural edge of Mound 2. Excavation was conducted in one lot to a depth of 140cm below Datum 6, with a unit thickness of 30 cm. The soil of this unit was consistent with soil in Lots 1 and 2. Roots inclusions were observed to be heavier near the ground surface, especially in the humus layer and decreased in frequency with depth. Limestone inclusions were present throughout this unit and increased in size and frequency with depth. Excavation ceased at 30cm below surface due to large immovable rocks.

Ceramics and lithics were found in this unit. Ceramics consisted of four body sherds. Three of these were heavily eroded and unable to be identified. The remaining sherd was classified as unnamed striated sherds. Lithics were slightly less plentiful with three pieces of debitage collected. An interesting item collected in this unit was a small piece of plaster. Based on information collected last season this type of material was used heavily for surfaces at Operation 11 (Whitaker 2007). Though the plaster piece collected was small (less than 1 cm in width and length), it suggests that this structure was, like many areas of Mound 1, surfaced with plaster in antiquity.

Suboperation BF (93S/98E) was excavated in one lot with the intention of identifying the eastern structural edge of Mound 2. Excavation in this unit proceeded to a depth of 124 cm below Datum 6, with a total lot thickness of 24 cm. Soil in this unit was identical to descriptions given in the previous Lots 1, 2, and 3. A large amount of limestone inclusions were present in the matrix and increased in size and frequency with depth from the ground surface. Root inclusions followed the same pattern mentioned above with a decrease in frequency with depth. Near the terminal elevations of this unit one large stone was removed, measuring 9 x 27 x 28 cm. Immediately below this stone were more stones of similar size which could not be removed. The stones observed at the terminal elevations of this unit were most likely not construction fill. Fill material would have been much more dense and of a smaller size. The stones observed were larger than cobble size, and thus were most likely the remains of the eastern structural edge.

The quantity of cultural materials collected in this unit was small. Seven body sherds were collected. Types included unnamed striated. Two of these body sherds were heavily eroded and unidentifiable. No chert lithics were collected in this unit. However, one obsidian fragment was found.

Suboperation AI (95S/99E) was excavated with the purpose of identifying the northernmost extent of the Mound 2. This unit was excavated in two lots and taken to a depth of 147 cm below datum. Lot 1 was taken to a depth of 103 cm below datum, with a

lot thickness of 6 cm. Soil layers seen in this unit were consistent with Lots 1-2. Limestone inclusions increased in size and frequency with depth. Root inclusions were heavier near the ground surface and decreased in density with depth. Lot 1 was sterile of artifacts.

Lot 2 was excavated to a depth of 147cm below datum, with a lot thickness of 34 cm. The soil in this lot was lighter in color than the soil observed in Lot 1, and consistent with descriptions of Lot 3. Numerous limestone pebble, gravel, and cobble inclusions were observed. Root inclusions continued to decrease with vertical distance from the ground surface. Several large chert cobbles were removed from the matrix. Measurements of these stones were 13, 14, 18, and 26 cm, all with a thickness of 7 cm. Material culture was minimal in this unit, consisting of ten body sherds. The majority of these sherds were unable to be identified. However, a single sherd was identified as striated. Lithics were far less numerous, only a piece of debitage was collected.

Suboperation AH (94S/99E) was also excavated with the intention identifying the northern extent of Mound 2. Excavation was conducted in one lot to a depth of 145cm below Datum 6, with a unit thickness of 32 cm. Lots 1-3 were excavated in this unit. Numerous root and limestone inclusions were present throughout this unit. Limestone inclusions increased in size and frequency with depth. Root inclusions were heavier in the first soil layer, and decreased in Lots 2 and 3.

At the terminal elevations of this unit large rocks made continuation impossible. Limestone and chert rocks removed were of variable sizes, but averaging 12 cm in diameter, the largest was measured at 25 cm in diameter. More than likely these stones do not represent fill material. The excavation of other suboperations in the vicinity, discussed later, showed that fill would be present closer to the ground surface (typically around 10 cm in depth). It is likely that this unit is the northern structural edge, as evidenced by structural fill not being encountered and large immovable stones. However, some ambiguity remains concerning the actual location of the northern structural edge of Mound 2. The small size of this unit, along with a lack of any supporting data from other units does not allow a solid conclusion to be reached. To denote this ambiguity the northern structural edge of Mound 2 is represented by dashed lines on the operation map (Figure 1).

Lithics and ceramics were collected in this unit. Two tools and one piece of debitage were found, along with 26 body sherds and two rim fragments. The identifiable ceramics in this unit were identified as Achote Black. In addition, burned limestone was observed throughout this unit, but not collected.

Suboperation V (92S/96E) was excavated in two lots with the intention of locating the western structural edge of Mound 2. Lot 1 was excavated to a depth of 125 cm below Datum 6 with a total lot thickness of 13 cm. The soil of this lot consists of a thin humus

layer with numerous root and organic inclusions, identical to descriptions given above for Lot 1. The next soil layer is identical to descriptions given for Lot 2. Limestone inclusions were observed to increase in size and frequency with depth. Lot ended due to encountering numerous limestone and chert cobbles.

Lot 2 was excavated to 160 cm below datum, with a total lot thickness of 35 cm. Limestone and chert cobbles characterized this unit. At the time of excavation it was not thought that these stones were the remains of dry fill. They were not as compact as other examples seen this season in 2006. However, it is possible that the Mound 2 structure was simply more eroded in this area, which would explain the looser cobble stones. Excavation in Lot 2 ceased when an immovable rock was encountered.

Thirty-four body sherds were collected in this lot, along with three rim fragments. Twenty-four of these body sherds were collected including three described as black-slipped. The remaining ceramic pieces could not be identified. Lithic materials were slightly less plentiful. Twenty-three pieces of debitage were collected.

Suboperation BG (93S/99W) was a 50 cm diameter posthole excavated with the purpose of attempting to locate the western structural edge of Mound 2. This unit was excavated in one lot to a depth of 147 cm below Datum 6, with a lot thickness of 34 cm. The soil of this unit was consistent with descriptions of Lots 1 and 2 given in the previous section. Limestone and root inclusions were noted during excavation in the same pattern noted above. The western structural edge of mound 2 was not located in this suboperation. The physical characteristics of this unit showed it to be construction fill. Cobbles were tightly packed and had an average measurement of 10 x 20 cm.

Artifacts associated with this unit were ceramic and lithic materials. The ceramics were observed but not collected. They were few in number and all were too small to be analyzed in the lab. Lithics were likewise few in amount and consisted of four pieces of debitage.

Suboperation BH (93S/99.5E) was excavated in one lot to a depth of 147 cm below Datum 6. Total unit thickness measured 30 cm. Excavation terminated when bedrock was reached. The purpose of this unit was to locate the western edge of Mound 2. The soil of this unit consisted of a thin humus layer, with heavy organic and root inclusions. The humus layer was followed by a dark soil layer consistent with Lot 2. Limestone inclusions increased in size and frequency with depth. This unit was characterized by construction fill. Cobbles were observed to be loose in the upper 15 cm of the unit. It was thought at the time that since these stones were not tightly packed that this was not construction fill. However, after 15 cm the cobbles observed became increasingly tightly packed in the unit and it was determined that fill was being encountered.

Few artifacts were found in this unit. The ceramics collected consisted of 21 body sherds. None of these items could be identified. Lithics were found in smaller numbers. Nine pieces of debitage were collected through the excavation of this unit.

Suboperation AE (93S/98E) was excavated with the purpose of identifying the western edge of the structural remains of Mound 2. This unit was excavated in one lot to a depth of 106 cm below Datum 6. Total unit thickness measured 9 cm. Soil was consistent with descriptions of Lots 1 and 2. Limestone inclusions were present throughout the entirety of this unit, and were observed to increase in size and frequency with depth. Roots were more prevalent near the ground surface and decreased with depth.

Excavation terminated when a large immovable stone was encountered. This stone extended 20 cm from the southwest edge of the unit. Above this stone were numerous cobbles. The most likely explanation for the occurrence of these stones in this area was that construction fill was being observed.

Few artifacts were collected in this unit. A single body sherd and 11 pieces of debitage were all that was removed from this unit during the excavation process. The body sherd was heavily eroded and unidentifiable.

Suboperation AF (90S/99W) was excavated with the purpose of locating the southwest structural corner of Mound 2. This unit was excavated in one lot and taken to a depth of 64cm below Datum 6. Lot thickness measured 55 cm. Excavation of this unit continued until the bedrock surface was reached. Stones in the fill measured 10 cm and smaller in the upper layers of the unit to larger chert pieces, measuring 25-30 cm in the lower sections of the unit. The most plausible interpretation is that this unit can be characterized as construction fill. Three lines of evidence support this interpretation. The first line of evidence comes from observations while cobbles were removed. Excavation in 2006 showed that the platform of Mound 1 was constructed by placing large stones on the bedrock surface and then placing increasingly smaller sizes of stone and other materials upward in the profile. This method of construction has been noted elsewhere at Medicinal Trail site (Ferries 2002). The second line of evidence is the soil of this unit, which, as was the case elsewhere on Mound 2, was shallow, consisting of a thin humus layer followed by a thin dark soil layer (i.e. Lots 1 and 2). In addition, cobbles in tightly-packed, large quantities were encountered within 10 cm of the ground surface, which of course has been noted elsewhere at Operation 11 (Whitaker 2007). It is unlikely that the construction fill of Mound 2 was being observed here. This unit was placed to find the southwestern corner of Mound 2, as stated above. At this location fill would have not been encountered on Mound 2 unless a structural wall has eroded, spilling the fill out. If this were the case then the materials observed would not have been tightly packed. The information given above shows that the fill encountered in this unit was tightly packed in a manner suggesting that it was still intact. Thus, the most solid

interpretation that can be made is that the southwestern corner was not in this unit. Rather, what was being observed was the construction fill of the patio.

Artifacts collected from this fill consisted of ceramic and lithic materials. Sixty three body sherds were collected, all of which were unidentifiable. Lithic materials were less plentiful. Only eight pieces of debitage were collected.

Suboperation Y (90S/99E) was excavated with the intention of locating an eastern structural edge of Mound 2. Excavation proceeded to a depth of 153cm below Datum 6, with a lot thickness of 33cm. Soils in this unit were consistent with descriptions given in the previous section of Lots 1, 2, and 3. Limestone inclusions were present throughout the unit and were observed to generally increase in size and frequency with depth. Root inclusions were particularly heavy in this unit throughout all soil layers. A large number of chert pebbles and cobbles were observed, none exceeding 12cm in width. It is doubtful that a structural edge was encountered in this unit. Later excavation in suboperation BE showed it to be approximately 30 cm to the east of this unit. Therefore, what was encountered in this unit was most likely another example of construction fill.

Thirty-four body sherds were collected, along with four rims fragments. Unfortunately, only 14 of these items could be identified. Four body sherds were Achote Black, five body sherds and two rims were Cayo Unslipped, and finally, three body sherds were identified as Tinaja Red. Lithic materials were not as abundant and only four pieces of debitage were collected.

Suboperations R, S, T, U, X, Z, AA, AB, AC, AD, AG, and AJ

The units discussed in this section were excavated with the purpose of better understanding the space to the east of Mound 2. It was suspected that this may have been a zone of refuse. The works of Thomas Killion (1987, 1992) and Brian Hayden and Aubrey Cannon (1983) have shown that contemporary rural agricultural settlements in the humid tropics dispose of refuse by moving it in a patterned fashion away from the structural core of the site. If this is correct then this pattern of outward movement of refuse should be evident in the areas surrounding Mounds 1-3. However, it was not assumed that the location of artifacts denotes that they were the result of cultural deposition. Rather, natural processes were taken into consideration when material culture items encountered in these areas. Unfortunately, the determination of artifact context has not yet been completed, and so cannot be discussed further in this report.

Suboperation R (96S/97E) was excavated in one lot to a depth of 118 cm below datum 6, with a total unit thickness of 26 cm. Soil in this unit was consistent with descriptions of Lots 1 and 2. Roots were a constant problem in this unit and the cause of the termination of excavation. The roots observed at the terminal elevations of this unit exceeded 10 cm in diameter, and most likely were part of the root systems of several nearby trees (Figure 1). Limestone inclusions were observed throughout the unit and followed a pattern

similar to that mentioned for other suboperations in the preceding subsection. However, since this unit was terminated before reaching the bedrock surface the overall picture of limestone movement from bedrock to ground surface could not be fully observed.

A small amount of heavily eroded ceramic pieces were observed before the suboperation had to be closed. All of these sherds were smaller than 2 cm, and were thus not collected for analysis in the lab. No lithics were found in this unit.

Suboperation S (96S/96E) was excavated in one lot to a depth of 126 cm below Datum 6, with a total unit thickness of 29 cm. Excavation stopped when bedrock was reached. All three soil layers were observed in this unit. The same upward movement of limestone from bedrock was observed, with a marked increase in the amount of pebble and gravel inclusions after the 15 centimeter mark, becoming more prevalent as excavation approached bedrock.

Six body sherds were collected. None of these artifacts could be identified. Lithics were more plentiful and consisted of 13 pieces of debitage. The majority of these artifacts were collected between the depths of 20-25 cm. It was noted during excavation that few items were located above or below these measurements. Observed also, but not collected, were numerous pieces of burned limestone, most of which was found around the 20 cm mark.

Suboperation T (94S/97E) was excavated to a depth of 146 cm below Datum 6, with a total unit thickness of 39 cm. A large amount of root inclusions were seen throughout the unit. These roots increased in diameter with depth and ultimately led to the termination of excavation. The soil of this unit was consistent with Lots 1-3 noted in the previous subsection. Limestone inclusions were noticed in large quantities after 15 cm, suggesting that the same processes are at work within this unit as elsewhere already discussed.

The artifacts of this unit consisted of five pieces of debitage. These items were not confined to a specific area as was seen elsewhere, but rather were found throughout the unit. A possible reason for this lay in the natural processes occurring within this suboperation.

Suboperation U (94S/96E) was excavated in one lot to a depth of 142 cm below Datum 6, with a total unit thickness of 35 cm. Excavation was terminated when bedrock was reached. As was the case with other units excavated this season limestone fragments increased in size and frequency with depth, and were particularly heavy near bedrock. Roots inclusions were numerous in this unit. However, all the roots observed were small. None exceeded 4 mm in diameter.

No artifacts were collected in suboperation U. A large amount of ceramic pieces were observed in this unit. However, all of them were heavily eroded and too small to be

collected. It is interesting to note however that these artifacts primarily were deposited between the depths of 20-25 cm below ground surface, with relatively few items above or below these measurements.

Suboperation X (92S/97E) was excavated in two lots to a depth of 149 cm below Datum 6. Lot 1 was excavated to a depth of 119 cm below datum, with a lot thickness of 4 cm. Soil consisted of a thicker more identifiable humus layer (Lot 1), unlike what was seen in other units. This soil layer was heavy with roots and decomposing organic materials. A small amount of limestone inclusions was noted in this lot. No artifacts were collected or observed.

Lot 2 was excavated to a depth of 149 cm below datum, with a total lot thickness of 30 cm. The terminal elevations of this lot were defined by the bedrock surface. Root inclusions in Lot 2 decreased considerably. There were no roots visible at 5 cm above the bedrock surface. Lots 2 and 3 were observed in this unit. Limestone inclusions were more prevalent near the bedrock surface and decreased considerably with proximity to Lot 1.

Ceramic and lithic materials were collected in lot 2. Ten body sherds were found. Five of these were classified as gunshot. Ten pieces of debitage were also collected. Despite the overall low number of artifacts found within this unit the majority of them were found between the depths of 18-24 cm. Few artifacts were collected above or below this depth range.

Suboperation Z (90S/98E) was excavated in one lot to a depth of 154 cm below Datum 6, with a total unit thickness of 21 cm. The soil in this unit was considerably shallower to bedrock than observed in many other units. Regardless, all three soil layers were observed. It is possible, but not certain, that the reason for the decreased depth of this unit may have been due to a rise in the bedrock surface. Large thick roots were observed throughout the unit, increasing in diameter with depth. Limestone inclusions were also present in this unit, and were observed to increase in size and frequency with depth.

Eleven body sherds were found in this unit. Five of these were identified as Tinaja Red. Six others were found and deemed unidentifiable by the project ceramicist. Lithics consisted of nine pieces of debitage. Unlike suboperation X, which had less root inclusions, the artifacts in this unit were not as tightly confined to particular depths. This may have been due to the nature of root systems, which are known to move items around in the soil (Schiffer 2002; Pyddoke 1961). However, artifacts did occur in a slightly increased frequency at 10-12 cm.

Suboperation AA (90S/97E) was excavated in one lot to a depth of 155 cm below Datum 6, with a total unit thickness of 33 cm. The terminal elevations of this unit were defined by the bedrock surface. All three soil layers were observed in this suboperation. Root

inclusions were not as heavy and primarily confined to the upper section of the unit. Furthermore, all of the roots observed were small in diameter; none exceeded 4-5 mm. Limestone inclusions were present throughout, and followed same pattern of the size and frequency of materials increasing with depth.

Lithic and ceramic items were removed from this unit. Six body sherds were collected. All of these sherds were deemed unidentifiable. Lithic items were slightly more plentiful and consisted of eight pieces of debitage. The majority of these materials were collected between the depths of 19-24 cm.

Suboperation AB (88S/99E) was excavated in two lots to a depth of 80 cm below Datum 8. Lot 1 was excavated to a depth of 52 cm below datum, with a lot thickness of 33 cm. The soil of this unit fit the descriptions given for Lots 1-3 in the previous section. The same pattern of limestone inclusions was seen in this unit. Root inclusions were present in small quantities throughout the unit. They were observed to be heavier in the humus layer and decreased considerably with depth.

Four body sherds were found in this unit, all of which were unidentifiable. Lithic items consisted of seven pieces of debitage. The majority of these items were located near the terminal elevations of the lot.

Lot 2 was excavated to a depth of 80cm below datum. Total thickness of the lot measured 28cm. The bulk of this unit seems to have consisted of eroded bedrock, which seems to have been more eroded than other areas of excavation revealed. Thus, it was mistaken for a soil layer. No artifacts were collected in this lot.

Suboperation AC (88S/98E) was excavated in two lots to a depth of 72 cm below datum 8. Lot 1 was excavated to a depth of 36 cm below datum. Total lot thickness measured 17 cm. The soil observed in Lot 1was consistent with descriptions of Lots 1-3. A large amount of root inclusions were observed. These roots were heavy in the first soil layer and decreased in frequency in Lots 2 and 3. Limestone inclusions were present throughout the unit, and conformed to the same pattern mentioned above.

Few artifacts were collected from Lot 1. Two small ceramic pieces were observed, but not collected due to their small size. Lithics collected in this lot were likewise few in number and consisted of two pieces of debitage.

Lot 2 was excavated to a depth of 72 cm below datum. Lot thickness measured 36 cm. It seemed that the same situation was occurring in this lot as mentioned above for suboperation AB Lot 2. The limestone bedrock was heavily eroded, and gave the initial impression of a distinct soil layer. No artifacts were collected or observed.

Suboperation AD (88S/97E) was excavated in two lots to a depth of 57 cm below Datum 8. Lot 1 was excavated to a depth of 33 cm below datum. Lot thickness measured 11 cm. Soils were consistent with descriptions of Lots 1 and 2. Limestone inclusions in the soil conformed to the pattern seen in other units. Roots were present in large quantities, decreasing in frequency with depth. Measurements were taken of these roots. It was found that they ranged in size from 2 to 11 mm in diameter.

Artifacts in Lot 1 consisted of small amounts of ceramic and lithic pieces, most of which were found near its terminal elevations. Four body sherds were collected. All of these items were un-typed, but were from Tepeu 2-3. Lithics were likewise small in amount collected, only three pieces of debitage were found within this lot.

Lot 2 was excavated to 57 cm below datum. Lot thickness measured 24 cm. Excavation terminated when bedrock was reached. Limestone inclusions within the soil increased considerably from the size and amount seen in Lot 1. Very few roots were observed, most were seen in the upper 5 cm of the lot, with almost none below that measurement. No artifacts were observed or collected.

Suboperation AG (88S/99W) was excavated in one lot to a depth of 49 cm below Datum 8. Total unit thickness measured 15 cm. Excavation in this unit terminated upon reaching the bedrock surface. The soil in this unit, while much thinner than seen elsewhere, was consistent with Lots 1-3. The decreased depth of the soil in this unit may have been the result of a rise in the bedrock surface. Limestone inclusions were observed throughout the unit. These inclusions, as noted elsewhere in this report, were increased in size and frequency with depth.

Four body sherds were collected from this unit. Three of these sherds were unidentifiable. The remaining ceramic piece was identified as Striated. Eight debitage pieces were found, along with a single obsidian blade fragment. These artifacts, while few in amount, were primarily concentrated between the depths of 8-12 cm, with almost no items above or below these measurements.

Suboperation AJ (85S/99E) was excavated in one lot to a depth of 66 cm below Datum 8. Total unit thickness was 28 cm. Root inclusions were heavy in the upper 8 cm of this unit and decreased markedly below that measurement. The soils of this unit were identical to descriptions of Lots 1-3 given in the previous section. Limestone pebbles and gravel inclusions increased in size and frequency as excavation approached bedrock.

Four body sherds were recovered, none of which were identifiable. Even fewer lithic items were found. Only two pieces of debitage were collected in the excavation of this unit. These artifacts were noted as being confined to the depths of 15 to 22 cm. No material culture items were found outside these depth measurements.

Suboperations AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, and BD

The suboperations discussed in this subsection are those units that were excavated on the south side of Mounds 1 and 3. The following discussion is broken down into three subsections. The first subsection involves those units that were placed to determine the southward extent of the patio area. The second subsection is a discussion of excavation units that were placed to investigate the space south of Mounds 1 and 3. Finally, the third subsection deals with suboperations used to investigate the proposition that Mound 3 resulted from cultural rather than natural formation.

Suboperation AK (91S/96W) was excavated in one lot to a depth of 33 cm below datum 8. Total unit thickness measured 31 cm. The purpose of this unit was to locate the patio edge not located in 2006. Numerous roots were observed to be present on the surface, decreasing considerably once excavation began. At 18 cm below datum chert and limestone cobble sized stones were encountered. After the removal of these initial cobbles it was observed that more cobbles lay below. A cursory investigation of these stones showed them to be tightly packed in a manner suggesting the presence of construction fill. For this reason excavation was terminated in this unit.

Two body sherds and three pieces of debitage were collected in this unit. The ceramic pieces were heavily eroded and could not be identified. These artifacts were all found in the upper 8 cm of the unit. No cultural materials were observed or collected below that measurement.

Suboperation AL (90S/96W) was excavated in one lot to a depth of 82 cm below datum 8. Unit thickness measured 56 cm. The soils of this unit were consistent with Lots 1-3. Limestone inclusions increased in size and frequency with depth. Roots inclusions were also abundant. Like many other units excavated this season the majority of them were concentrated in the humus layer and decreased in Lots 2 and 3. In the upper 12 cm of the unit chert and limestone cobbles were observed.

Artifacts were found below these cobbles in a zone primarily confined between the depths of 15 and 22 cm. In total 21 body sherds were found, along with two rim fragments of Alexanders Unslipped. Three of these body sherds were identified as Achote Black. The remaining body sherds were unable to be identified. No lithics were found in this unit.

Suboperation AM (88S/95W) was excavated in one lot to a depth of 82 cm below Datum 8. Unit thickness measured 44 cm. The soils of this unit were consistent with Lots 1-3. Limestone pebble and gravel inclusions increased in size and frequency with depth, with some cobbles seen near the bedrock surface. Small roots were present in large quantities throughout the unit, and not primarily confined to soil layer I.

Sixteen body sherds and three pieces of debitage were collected from this unit. The body sherds were of three ceramic types. Four of these sherds were Achote Black, while six were Tinaja Red. The assemblage found within this unit, while small in amount, was primarily situated between the depths of 20-27 cm, with few artifacts above or below these measurements.

Suboperation AN (86S/96W) was excavated in one lot to a depth of 69 cm below Datum 8. Unit thickness was measured at 21 cm. Excavation terminated when bedrock was reached. The soils observed here were consistent with descriptions of Lots 1-3. Roots were observed in large amounts throughout the unit, and not primarily confined to the upper elevations as was seen elsewhere this season. Limestone inclusions were present throughout the unit and increased in size and frequency with depth.

Ceramics were the most abundant artifacts collected in this unit. All of these ceramic pieces were body sherds. One sherd was Striated, two were identified as Tinaja Red, and five sherds were unable to be identified. Lithic items recovered were confined to a single piece of debitage. The majority of these artifacts were collected between the depths of 20 and 28 cm.

Suboperation AO (90S/91W) was excavated in one lot to a depth of 115 cm below Datum 8. Total unit thickness measured 38 cm. Excavation ceased when the bedrock surface was reached. Soil conformed to descriptions of Lots 1-3. Limestone inclusions likewise continued the pattern of increasing in size and frequency with depth. Roots were exceptionally light in this unit and primarily confined to the upper 10 cm of excavation.

Twenty-one ceramic items were collected from this unit. Twenty of these were body sherds; the remaining item was a rim fragment. This rim fragment was identified as Cayo Unslipped. Two were unnamed striated, one was Subin Red, and three were identified as Tinaja Red. Thirteen of these body sherds could not be identified. Lithics were found in higher numbers. Thirty-two pieces of debitage were collected. These artifacts were primarily found between the depths of 20-27 cm.

Suboperation AP (88S/92W) was excavated in two lots to a depth of 139 cm below Datum 9. Lot 1 was excavated to a depth of 101cm below datum. Total lot thickness was 2 cm. The color of this soil was different than that observed elsewhere this season. It was similar in color to the soil seen during the excavation of Mound 1. It is likely that this layer of soil was backfill washed down the slope from units excavated in 2006. No artifacts were collected in this lot.

Lot 2 was excavated to a depth of 139 cm below datum. Lot thickness was 38 cm. A small amount of roots were present throughout and not primarily confined to the first soil layer. Soil in this lot was consistent with Lots 1-3. Limestone inclusions followed a pattern to that seen in other units. One large chert cobble was removed from this lot.

The presence of all three soil layers along with the pattern of limestone inclusions observed serve to strengthen the interpretation that Lot 1 was the result of backfill from the 2006 excavations, which had washed downslope over the past year.

Artifacts consisted of numerous ceramic pieces and a small amount of lithic items. Four different types of ceramics were seen in Lot 2, all were body sherds. One sherd was classified as cream-slipped, eight were unnamed striated, two were Tinaja Red, two were classified as Cayo Unslipped, and finally, 11 could not be identified. Lithic materials were far less abundant, with only eight pieces of debitage collected. The majority of these items were recovered between the depths of 20 and 30 cm, with few artifacts above or below these vertical measurements.

Suboperation AQ was excavated in one lot to a depth of 131 cm below Datum 9. Unit thickness measured 25 cm. Excavation was terminated upon reaching bedrock. All three soil layers were observed in this unit. A small amount of root inclusions were seen throughout the entirety of this unit. None of these roots exceeded 3 mm in diameter. Limestone inclusions followed the same pattern of upward movement from bedrock mentioned above.

Six body sherds were collected in this unit. Two of these were Cayo Unslipped. The remaining four sherds were unable to be identified. Lithics consisted of eight pieces of debitage. These materials while few in number were located between the depths of 12-17 cm, with a complete absence of cultural materials above or below these depths.

Suboperation AR (84S/92W) was excavated in one lot to a depth of 153 cm below Datum 9. Unit thickness was 34 cm. Excavation terminated when the bedrock surface was reached. This unit followed the same pattern concerning limestone inclusions. Likewise the soil of this unit was similar to that noted above in that all three soil layers were observed. Large amounts of roots were visible on the surface. These roots were heavy in the first soil layer and decreased with depth. No roots were observed past 29 cm from ground surface.

Ceramic materials consisted of seven body sherds, all of which were unidentifiable. Lithics were less plentiful. Only three pieces of debitage were recovered lithics. All of these artifacts were found within a zone of 7 cm, between the depths of 20 and 27 cm. A few small ceramics pieces were observed above these measurements. However, they were too small for collection.

Suboperation AU (88S/90W) was excavated in one lot to a depth of 135 cm below Datum 9. Unit thickness was measured at 45 cm. Excavation terminated upon reaching the bedrock surface. Root inclusions were present throughout unit, with a decrease in frequency and thickness with depth. Soil was similar to many of the other units

encountered this season. All three soil layers were observed during the excavation of this unit. The patterning of limestone inclusions in the soil was observed to be consistent with observations made elsewhere this season.

Few artifacts were found in this unit. A small number of ceramic sherds was observed. However, they were all too small to be collected for analysis in the lab. No lithic items were observed or collected.

Suboperation AV (86S/90W) was excavated in one lot to a depth of 124 cm below Datum 9. Unit thickness measured 20 cm. Conditions on the surface showed limestone pebbles and a large amount of small roots visible. Through excavation it was shown roots present within this unit decreased in frequency with depth. The soil observed in this unit was identical to descriptions, given in the previous section, of Lots 1-3. Limestone inclusions within the soil followed the same pattern of upward movement from bedrock.

Artifacts were quite abundant in this unit and were collected primarily from the depths between 7 and 15 cm. The largest amount was encountered nearer the ten centimeter mark. Ceramic items were the most abundant artifact class, represented by 56 body sherds and a single rim fragment. Only seven of these artifacts could be identified. Ceramic types collected in this unit were Achote Black, unnamed striated, and thin Late Classic buff. Lithic items were far fewer in amount, consisting of seven pieces of debitage.

Suboperation AW (84S/90W) was excavated in one lot to a depth of 131 cm below Datum 9. Unit thickness was measured at 30 cm. Excavation stopped when bedrock was reached. All three soil layers were observed in this unit. Numerous roots were observed throughout the excavation of this unit. Unlike many other suboperations excavated this season, the roots in this unit became slightly thicker with depth. The most likely reason for this lay in the presence of numerous trees nearby (Figure 1).

Eight body sherds were collected, five of which were identified as Achote Black. The remaining body sherds collected could not be identified. Lithic materials were slightly fewer in number. Seven pieces of debitage were collected during the excavation of this unit. These artifacts like many others seen in this section of the operation were confined to particular depths, measuring between 10 and 17 cm. However, one ceramic piece was observed to be above these measurements.

Suboperation AX (92S/88W) was excavated in one lot to a depth of 69 cm below Datum 9. Unit thickness measured 10 cm. The unit was ended prematurely due to a large immovable limestone rock. The soil of this unit can be characterized as belonging to Lots 1 and 2. Root inclusions were not particularly heavy in this unit. Due to shallow depth, limestone inclusions were observed to be minimal in amount. These inclusions

became heavier near the terminal elevations of this unit. Near the ground surface several chert and limestone cobbles were observed.

Four body sherds were collected during the excavation of this suboperation. None of these items could be identified by the project ceramicist. No lithic materials were collected or observed.

Suboperation AY (90S/88W) was excavated in one lot to a depth of 134 cm below Datum 9. Unit thickness measured 35 cm. Excavation terminated upon reaching bedrock. Soil layer I in this unit was very thin (less than 1 centimeter). The soil below lot 1 was consistent with descriptions given in the previous section for Lots 2 and 3. Burned limestone was observed throughout the unit in small quantities. Roots were prevalent throughout the entirety of this unit, and decreased in frequency and thickness with depth.

Ceramic and lithic materials were found in small quantities in this suboperation. Twelve body sherds were recovered. In addition, numerous ceramic pieces were observed, but not collected due to their small size. None of these ceramics could be identified. Lithics were a minor component of the assemblage in this unit, and consisted of only two pieces of debitage. These materials were primarily collected between the depths of 18 and 27 cm.

Suboperation AZ (88S/88W) was excavated in one lot to a depth of 143 cm below Datum 9. Unit thickness measured 42 cm. Excavation terminated upon reaching the bedrock surface. Roots present in small amounts throughout unit, but decreased in size and amount with depth. All three soil layers were present within this unit. Limestone inclusions increased in size and frequency with depth. Burned limestone was observed throughout the unit in small quantities, but not confined to a particular zone.

Artifacts were abundant in this unit. Ceramic materials were the most numerous artifact class, with 165 body sherds collected, and a single jar rim fragment recovered. The ceramic types represented in this unit were Achote Black, Cayo Unslipped, unnamed striated, Tinaja Red, and Roaring Creek Red. Five pieces could not be identified. Lithic materials found consisted of 20 pieces of debitage. These materials, as seen elsewhere this season, were primarily confined to particular depths. In the case of this suboperation these depths were between 20 and 38 cm.

Suboperation BA (86S/88W) was excavated in one lot to a depth of 141 cm below Datum 9. Unit thickness measured 17 cm. Excavation terminated upon reaching the bedrock surface. Soils on this unit were consistent with Lots 1-3. Small roots were observed throughout the unit, decreasing in size and frequency with depth. Burned limestone fragments were observed in small amounts throughout the unit. As was observed elsewhere, limestone inclusions in this unit increased in size and frequency with depth.

Near the bedrock surface numerous limestone cobbles, gravel and pebbles were observed and removed.

As was the case with suboperation AZ the artifacts in this unit were quite numerous. Sixty-five pieces of ceramic materials were collected. Ceramic types in this unit's assemblage consisted of Achote Black, Alexander's Unslipped, and Tinaja Red. Six sherds could not be identified. Lithic materials were far fewer numbering nine pieces of debitage. The majority of these materials were recovered between the vertical measurements of 7 and 15 cm.

Suboperation BB (88S/86W) was excavated in one lot to a depth of 140 cm below Datum 10. Unit thickness measured 29 cm. Excavation terminated when the bedrock surface was reached. All three soil layers were seen in this unit. Limestone inclusions followed the same pattern seen elsewhere this season of increasing in size and frequency with depth. Burned limestone was observed but not collected in small amounts throughout the unit. Root inclusions were heavy in Lot 1 and decreased in frequency with depth. Very few roots were observed to be in Lot 3. However, a few larger roots were seen near the terminal elevations of this unit. The most likely source for these roots was a nearby stand of trees (Figure 1).

Ceramics were the most abundant artifact class in this unit. Nineteen body sherds were collected. Types identified were Red Slipped, unnamed striated, and Yaha Creek Cream. Three of these sherds were unable to be identified. Lithics were far less numerous. Three pieces of debitage were collected. These artifacts tended to be found in greater frequency in elevations between 12 and 18 cm. In addition, the burned limestone also tended to occur more frequently in this area.

Suboperation BC (88S/86W) was excavated in one lot to a depth of 146 cm below Datum 10. Unit thickness measured 20 cm from surface to bedrock. All three soil layers were observed in this unit. Limestone inclusions increased in size and frequency with depth. Root inclusions were more numerous in the humus layer and decreased in size and amount as excavation approached the terminal elevations of the unit.

Artifacts present in this unit were lithic and ceramic items. A singe piece of debitage was collected. Ceramics were far more numerous, with 26 body sherds collected, along with a single rim fragment. Ceramic types identified were Achote Black, Cayo Unslipped, and Yaha Creek Cream. Three body sherds could not be identified. These artifacts were primarily located between the depths of 7 and 14 cm.

Suboperation BD (86W/86S) was excavated in one lot to a depth of 153 cm below Datum point 10. Unit thickness measured 22cm from surface to bedrock. All three soil layers were observed in this unit. Limestone inclusions were observed to increase in size and frequency with depth. Root inclusions were particularly light in this unit, with only a few

in the humus layer. Below this soil layer there were few roots observed. At 19 cm below surface there were no roots observed.

Nineteen body sherds were collected. Identified types were unnamed striated. Seven of these sherds could not be identified. Lithics were far less numerous, consisting of three pieces of debitage. These materials were primarily collected between the vertical measurements of 10 and 16 cm.

The remaining two suboperations discussed in this report deal with the investigation of Mound 3. The purpose of these units was to determine whether Mound 3 was a cultural or natural feature. Unfortunately, there was not enough time this season to conduct a more thorough investigation of this feature. As a result, investigation of Mound 3 beyond its classification as a cultural or natural feature simply cannot be done at the present time.

Suboperation AS (91S/89W) was excavated in one lot to a depth of 100cm below Datum 9. Unit thickness measured 45 cm. Roots were present on the ground surface, and decreased considerably with depth. At 10 cm below surface limestone and chert cobbles, and artifacts, were encountered in large quantities. The cobbles were difficult to remove and were observed to be tightly packed in the unit, suggesting the presence of construction fill. Similar occurrences have been noted elsewhere this season, and in the 2006 excavations (Whitaker 2007).

The artifact assemblage of this unit serves to reinforce the interpretation that this unit was the structural fill of Mound 3. Two-hundred forty body sherds were recovered, along with nineteen rims and bases. Lithic materials were far less numerous, with 25 pieces of debitage recovered. In addition, burnt limestone and charcoal was observed mixed in with the fill in small quantities, but not collected.

Suboperation AT (90S/90W) was excavated in one lot to a depth of 112 cm below Datum 9. Unit thickness was measured at 39 cm. Excavation was terminated in this unit due to a large immovable piece of chert. All three soil layers were identified in this unit. The presence of Lot 3 in this unit indicates that although this unit was ended prematurely, the bedrock surface was close to the terminal elevations. Limestone inclusions followed the same pattern of increasing in size and frequency with depth from the ground surface. Root inclusions were more abundant in the humus layer and decreased considerably with depth. Numerous chert and limestone cobbles were removed during excavation. The presence of these stones suggests that the structural wall of Mound 3 may have burst open at one point, depositing fill material outside the confines of the mound.

Ceramics were the only artifact class found in this unit. Thirty-eight body sherds were recovered, along with five rim fragments. Observed within this unit, but not collected, was a small amount of charcoal at various depths in the unit.

CONCLUSION

The fieldwork conducted this season at Operation 11 was on the whole successful. All of the primary objectives mentioned in the introductory section of this report were met with a great deal of success.

Mapping this season was able to show that the previous interpretation of Operation 11 as an isolated mound was incorrect. Mounds 2 and 3 were found to be associated with the patio. It is not certain whether the remaining two mounds (Mounds 4 and 5) are cultural or natural formations.

Mounds 2 and 3 were shown to be cultural features rather than natural based on evidence obtained through excavation. Units placed around Mound 2 clearly showed that it was a cultural feature. The excavation of suboperations BE allowed for a clearer understanding of the construction methodology used to build this structure. As mentioned in the discussion of this unit this structure was built directly on the bedrock surface with large chert blocks. It was then built up and inward using increasingly smaller sizes of chert.

Mapping investigations south of these features showed that two additional mounds were present at Operation 11. Mound 4 was a rectangular shaped mound with seemingly heavy disturbance, as evidenced by the missing southern section of this feature, along with numerous bowl-shaped depressions in the vicinity. It is likely that this was a cultural feature due to its uniform width and height in the preserved sections. Unfortunately, as mentioned above, archaeological investigation did not proceed past mapping. Therefore, no attempt at determining this feature's function can be attempted here.

Mound 5 was much smaller and square-shaped. A convincing argument based on appearance alone could be made for either cultural or natural origins. Nonetheless, this feature was added to the map, but with dashed lines to note its ambiguity.

The investigation of the patio area was completely successful in terms of determination of width. Through the excavation of suboperations AK and AL it was shown that the patio extended 2 m southward from the platform wall at Mound 1 (Figure 1). In retrospect it would have been more useful to the overall goals of this research to expose more of the patio area. Unfortunately, not enough time was allotted to investigate this area of the operation in 2006. This error was further compounded by the small amount of time available for fieldwork this season, which only allowed for an investigation of patio width.

The investigation of the space around Mounds 1-3 was on the whole successful. The eastern and southern sides of the operation were investigated through posthole units. The purpose of excavation in this area, as mentioned above, was to investigate a possible zone of household refuse. Artifacts in these areas tended to be few in number. However, it

was observed that in many cases artifacts were found in particular vertical locations within the excavation unit. This could indicate that cultural processes were the cause of their deposition. However, since the analysis of these materials is not yet complete such a conclusion would be premature. Despite the fact that many of the ceramics found could not be identified according to type it has been determined by the project ceramicist that all of the ceramic materials date to the Tepeu 2-3 ceramic phases, which coincides with the Late Terminal Classic Period (AD 700-900) in this region, (Sullivan 2002).

A critical aspect of this investigation of external space was the understanding of the soil in the area around Mounds 1-3. This was primarily achieved through the excavation of suboperation BE, which not only allowed the investigator to obtain stratigraphic control of the area, but also, and more important to this research was the need to more clearly see the characteristics of this soil in terms of color, texture, structure and inclusions. It was observed in this unit that three soil layers were present (Figure 2.2). These three soil layers persisted throughout the area and were seen in all posthole units.

Roots were a constant factor in all units, and tended to follow a pattern of being heavy in Lot 1 and decreasing with depth in lots 2 and 3. However, it was observed in numerous instances that roots were also seen to be either present in equal amounts throughout the unit, or heavier in the lower elevations. The latter seemed to be the case in those units near trees.

Limestone inclusions were also a constant factor in all excavation units. Unlike roots however, these inclusions in the soil followed a consistent pattern in all suboperations, where the size and frequency of materials increased with depth.

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NOTHING FAUNA ABOUT IT: OVERVIEW OF THE 2007 SEASON

Jon B. Hageman, Northeastern Illinois University
David J. Goldstein, Universidad Peruana Cayetano Heredia
Erol J. Kavoutzis, University of Florida
Robin Goldstein, Northwestern University

INTRODUCTION

Fieldwork for the 2007 season began on May 19 and was completed on June 8. A group of 11 undergraduate students from Northeastern Illinois University, along with three graduate students from other institutions, collected data through excavation at two residential groups at the site of Guijarral (RB-18), a rural site located about 8 km northeast of La Milpa in northwestern Belize.

Excavations targeted the recovery of paleobotanical and zooarchaeological remains associated with two residential units previously investigated in 1998, 2000, 2005 and 2006. Very little is currently known of the plants and animals consumed by rural Maya populations during the Late Classic (e.g., Emery 2003, 2004; Lentz 1999; White 1999). David Goldstein, project ethnobotanist, supervised botanical analysis. Erol Kavoutzis, project zooarchaeologist, oversaw the collection and analysis of faunal samples. Robin Goldstein oversaw the mound-based excavations at Guijarral. All ceramic evaluations were provided by project ceramist, Lauren Sullivan.

We are also in the process of conducting microbotanical analyses on samples recovered in 2005 and 2006, focusing on phytolith recovery. Analyses should be completed soon and we look forward to reporting on the results at that time.

DESCRIPTION OF EXCAVATIONS

Three programs of excavation were pursued at Guijarral, two at the site center and another at an associated plazuela group named Chispas (Figure 1). The first set of excavations focused on exposing the final plaza and interior floors at Structure A-7 in the site center, seeking interior and exterior floors associated with the latest construction phase. The second program of excavations consisted of a series of shovel tests around the Guijarral site center that extended outward in all four cardinal directions. Excavations at Chispas targeted the north wing of an L-shaped structure that encloses the north and west sides of the courtyard.

Mound-based excavations at Guijarral and Chispas used a variation of the Harris Matrix system as employed at Rio Azul (1983-1987) and the Ixcanrio Project (1990-1991). All excavated matrix was screened though ¼-inch hardware cloth to enhance artifact recovery. Observed ceramic and lithic artifacts were collected for future analysis. Floors

were carefully cleaned and the top 1 cm of matrix above the floor was collected for subsequent flotation analysis.

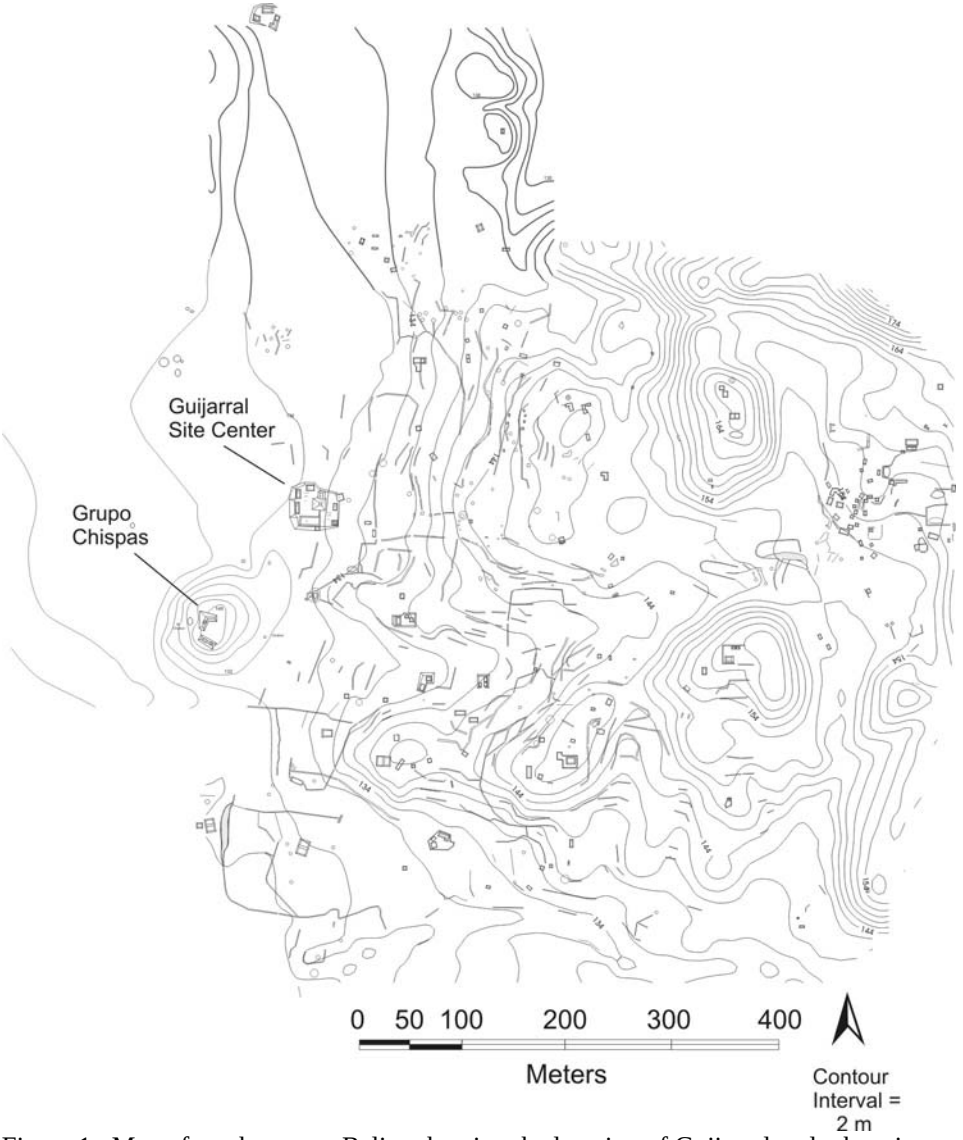

Figure 1. Map of northwestern Belize showing the location of Guijarral and other sites.

Guijarral: Site Center Excavations (Op 45 Subops U, V))

At Op 45, the search for floors began on the northwest corner of Structure A-7 (Figure 2). Here, a 2 x 2.5 m unit (Subop U) was established to expose the structure wall as well as a portion of the exterior (plaza) and interior floors. The proximity of Str. A-7 to A-1 meant that some of our excavation included talus from the A-1 looter's trench.

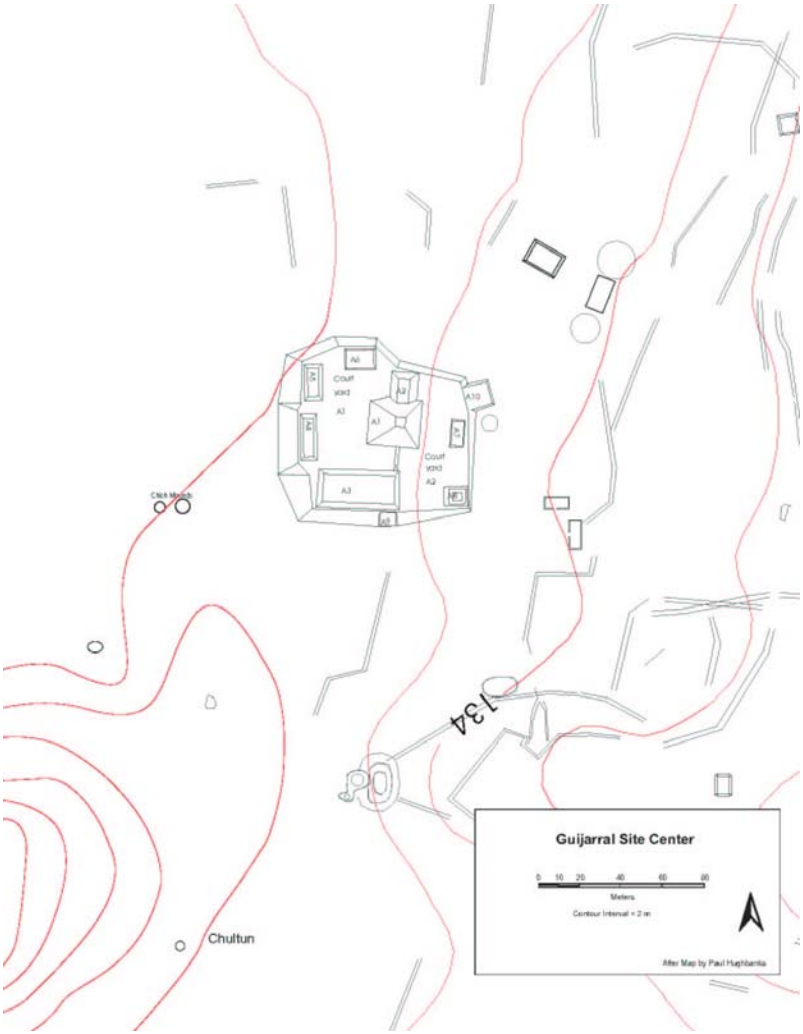

Figure 2. Guijarral Site Center.

About 180-200 cm below datum we identified a wall composed of two lines of faced stones with a core of rubble in between, measuring between 50-55 cm wide. The wall runs almost exactly north-south and consists of three-to-four courses of cut limestone blocks. Though no exterior floor was discovered, the interior floor was located about 42 cm below the top of the wall remnant. This was a hard plaster floor in very good condition (Figure 3).

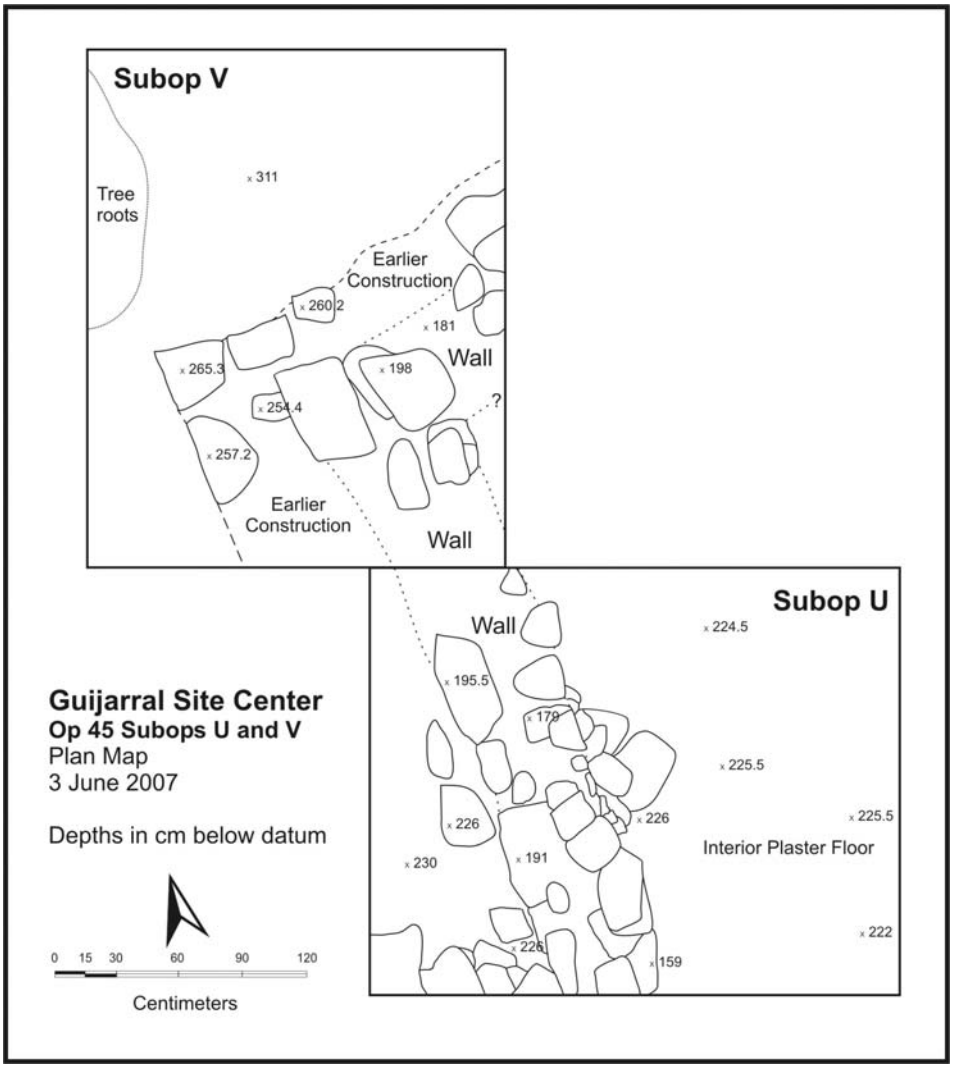

Figure 3. Plan map of Operation 45, Subops U and V.

The rubble between the ground surface and the floor largely consisted of marly gray powder and large limestone chunks, with few ceramics until immediately above the floor. All artifacts from within the building came from the 2 cm of rubble that lay atop the floor. Several large sherds had been broken in place directly on the floor, and many of them from across the unit appeared to come from the same vessel. These ceramics date to Tepeu 2-3, and include 46 sherds from the same Tinaja Red jar (Lauren Sullivan, personal communication). The floor itself was cleaned and scraped to collect microbotanical remains that may have been ground into the floor through foot traffic or other activities. These samples will be floated and dry-screened to isolate such remains.

Since Subop U missed the corner of the building, and an additional 2 x 2.5 m unit (Subop V) was laid out to identify it. This unit was north of Subop U and placed offset to the west to catch not only the corner, but also to attempt to locate any exterior floor that might have been preserved further to the north. This unit successfully exposed the northwest corner of the building (Figure 3) and cleared a substantial area for the exposure of exterior floor. Unfortunately, no such floor was recovered. Ceramics from this unit date to Tepeu 2-3.

A search for an exterior floor in Subop V found no such floor, but instead revealed an earlier construction phase. About 254-265 cm below datum several cut stone blocks were arranged in a linear pattern. Though earlier, the age of this phase was not ascertained. The later wall exposed through our efforts was clearly laid out on the same alignment as this earlier line of blocks. Upon encountering this line of blocks, excavations here ceased.

After final documentation, both units were backfilled at the end of the season. As with many of the buildings at the Guijarral site center, A-7 was occupied during the Late/Terminal Classic. Construction style is typical for the era and area, with cut stones faced on the external side and use of rubble cores within walls. The sherds recovered from the floor suggest the smashing of at least one vessel on the floor of the building prior to abandonment. Activities conducted in this structure may be better understood when analysis of the floor samples is completed in 2008.

Guijarral: Shovel Test Program (Op 45 Subop W)

The remaining excavations at the Guijarral Site Center were based on the collection of soil, botanical, and faunal samples from a grid of shovel tests emanating from the site center in the four cardinal directions (Figure 4). The grid was laid out using a four-screw optical transit, creating a loop around the site. At each 15 m interval the transit was turned 90 degrees and used to shoot in a line, or *brecha*, of shovel tests. Shovel tests were spaced five meters apart along each brecha and each was marked with its location and shovel test pit (STP) number on a pinflag. Each of these brechas extended at least 40 m away from the site center.

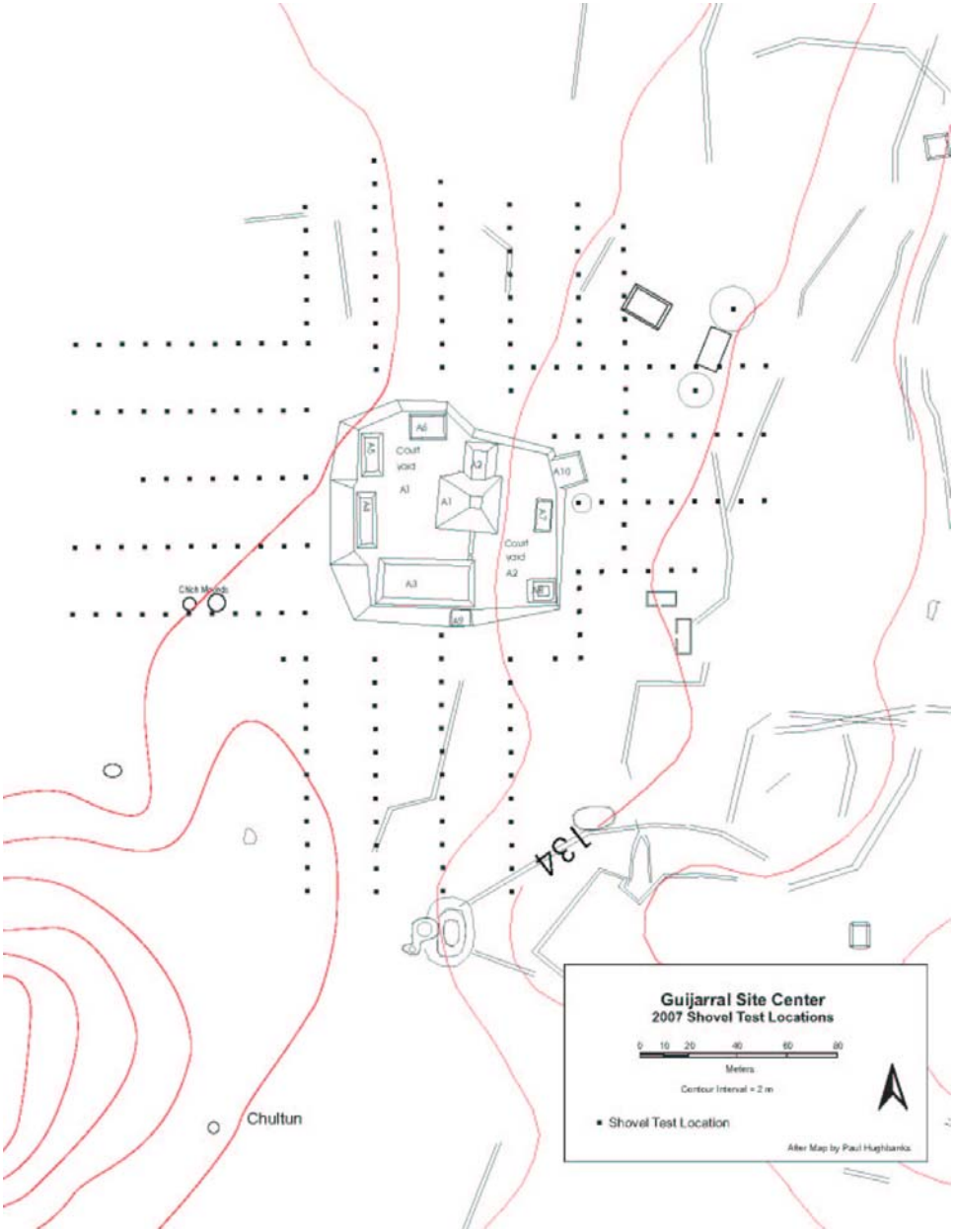

Figure 4. 2007 Shovel Test Grid at Guijarral Site Center.

Shovel tests consisted of round holes no larger than 50 cm in diameter, excavated to a maximum depth of 1 m. Most excavations went to between 30-35 cm, the depth at which cultural materials were identified. We avoided going into the clays underlying these deposits, though in some places clay was found both above and below cultural materials. A few shovel tests went up to a meter in depth to ensure that no earlier remains existed. A total of 187 shovel tests were excavated.

Ceramics encountered in these excavations were bagged and submitted to the lab. In addition, two sets of samples were taken from each shovel test: four liters for botanical remains and four liters for faunal remains. Samples were collected in 10 x 17 inch polypropylene sample bags, each with a drawstring and label. Soil pH was measured using a Kelway soil pH meter; soil color and texture were also recorded. The Kelway meter relies on a degree of conductivity dependent on a certain level of moisture present in the soil. Though we encountered a broad range of soil moisture levels ranging from slightly dry to almost completely saturated, we were unsuccessful in generating satisfactory pH readings.

All botanical samples were processed using the PFBAP Flote-Tech Model A flotation machine (Hunter and Gassner 1998; Rossen 1999). Subsequent field laboratory analysis of these samples used incident light microscopy to identify macrobotanical remains. A total of 38 samples were examined prior to the end of the season. This process was overseen by David Goldstein. Plant remains will also be classified later using our comparative collection and other resources as they become available.

All faunal samples were processed using a wet-screening method developed by Kitty Emery of the University of Florida and conducted by Erol Kavoutzis. Each sample was wet-screened through nested ¼, 1/8, and 1/16-inch screens. Many of our samples had a very high clay content, and were difficult to screen. We attempted deflocculation of the clay in several samples by adding baking soda to them. This had a negligible effect. We ended up allowing such samples air-dry overnight in order to make them more amenable to examination. The material trapped by each screen was visually scanned for faunal remains, but no faunal remains were recovered.

As a result of conducting these investigations, we made two discoveries. First, a previously undocumented, low mound was located about 75 m northeast of Guijarral site center (Figure 5). In addition, we found that the terrace and foundation-brace structures immediately to the east of Guijarral are actually about 15 m closer to the site center than depicted on the map. Figure 4 depicts the revised location of both the terrace and the foundation-brace structures.

The analysis of samples from this grid has allowed us not only to locate ancient trash deposits, but also to document their locations in space relative to the site center and to plot sherd densities (Figure 5). The area of the site with the highest density of ceramics is

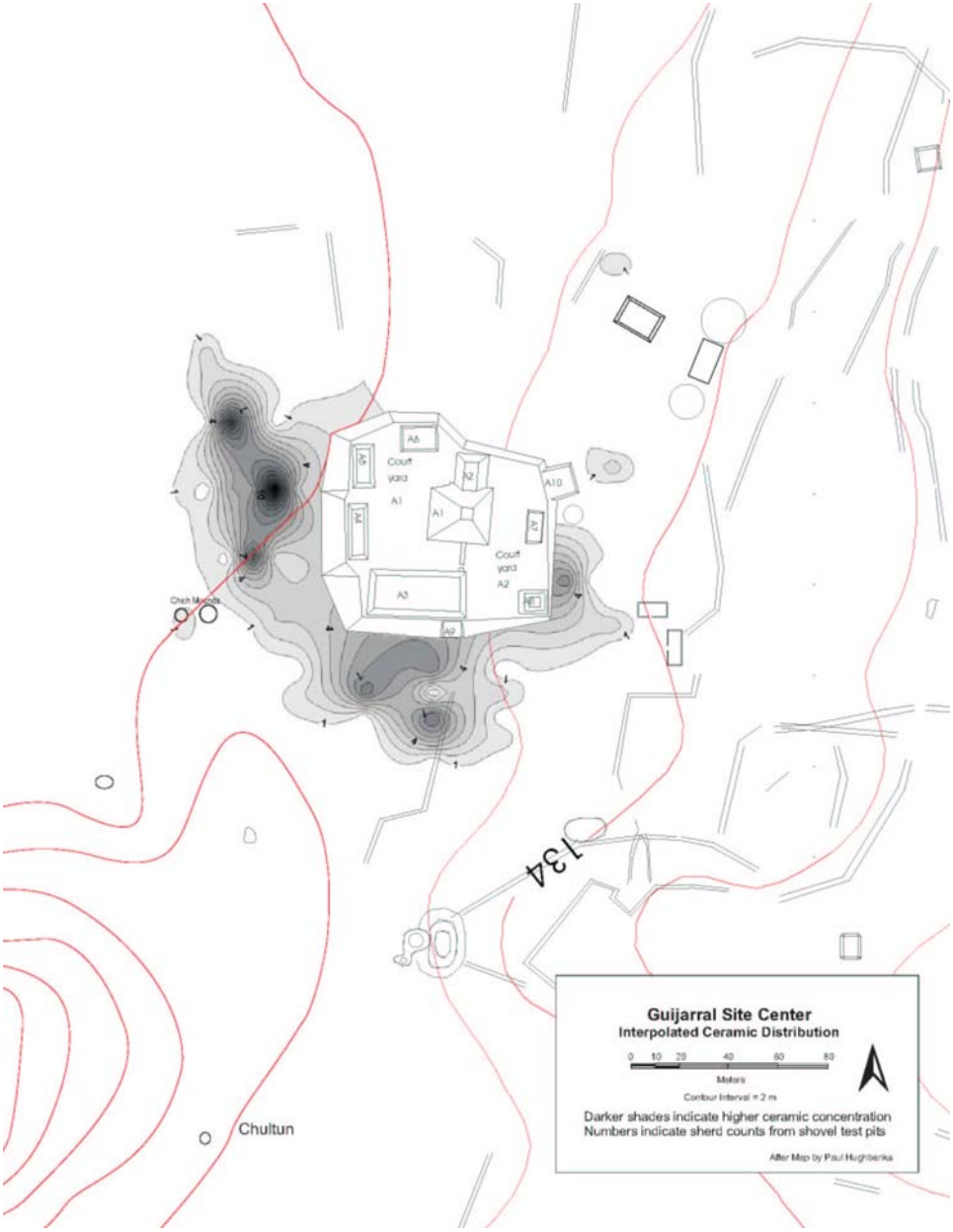

Figure 5. Ceramic Density at Guijarral Site Center.

to the west of the site center, roughly 10-15 m west of the gap between structure A-4 and A-5. This is both downslope and downwind from the site center, and is in line with what ethnoarchaeological investigations of 20th century highland Maya households indicated as the most common location for disposal of modern refuse (Deal 1998). Additional disposal areas were located south of structures A-3 and A-9, which may also benefit from the prevailing winds. A light scatter of trash was also identified just east of Structure A-8.

Though we are able to say with a high degree of certainty where the Maya disposed of their trash, and we have evidence of plant remains associated with the occupation, we identified no faunal remains. This will be discussed in more detail, below.

Chispas Group (Op 46 Subop M)

Some 150 m to the west of the Guijarral site center is a small residential group called Chispas. This consists of a low rectangular mound separated from an L-shaped building by a narrow gap (Figure 6). Our efforts this year were confined to the north wing of the L-shaped building, where we excavated a 2 x 3 m unit (Op 46 Subop M). This unit was placed to expose the outer edge of the wall, the abutting plaza floor, and any doorway that might be present.

After removing about one meter of topple and rubble, we did reach the plaza floor and the doorway (Figure 7). In contrast to the situation at Op 45 Subops U and V, we found a well-preserved floor outside the building. The floor extended 60-105 cm into the courtyard. The doorway of the building is about 103 cm wide (Figure 6). The recovered wall on the east side of the doorway stood 61 cm high, and consisted of four courses of stone. The wall on the other side of the doorway (to the west) is significantly taller, at 108 cm, and with six courses of roughly shaped cut limestone blocks. The topmost blocks were visible on two sides, with the corner blocks visible on three. Blocks dislodged from their original position by root action were found in the tumble.

Blocks from both sides of the doorway were highly variable in size and overall shape. Many were small and well-cut on only one face while others were much larger and faced on all sides. Still others fell somewhere within this range, which is typical of Late/Terminal Classic construction in the area. The walls were covered in plaster where they met the floor. Additional block remnants were found between the walls, in the floor, with cut sides facing outward and tapering to a point toward the interior of the building (Figure 7). These blocks protrude less than 1 cm above the floor level. Ceramics from this excavation correspond to Tepeu 2-3.

As with Op 45, a botanical sample was taken from this floor to be processed at a later date. Future excavations will focus on exposing interior floor in order to collect additional samples in an effort to identify activity areas and potentially types of activities that took place here.

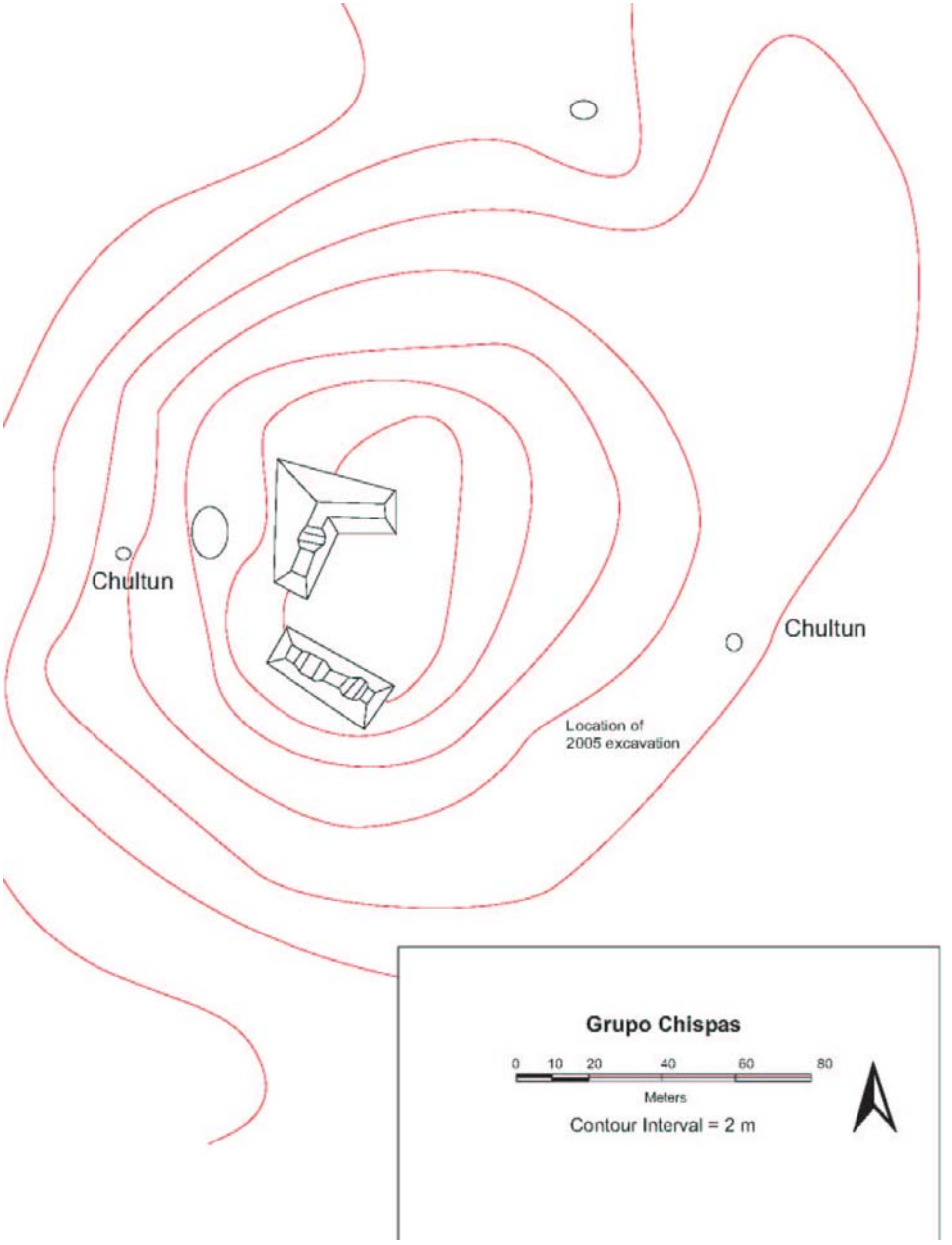

Figure 6. Chispas Group.

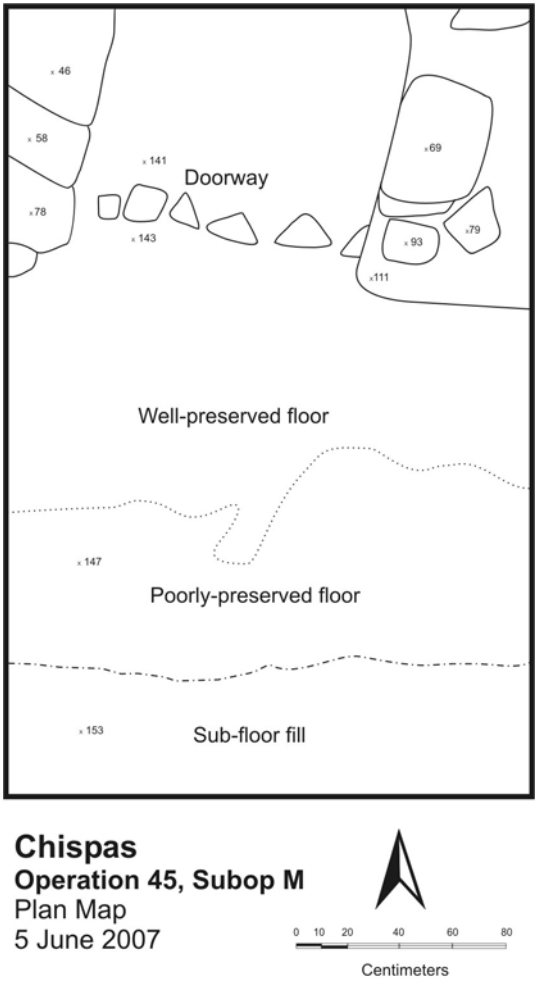

Figure 7. Plan map of Operation 46, Subop M.

DISCUSSION

Excavations in 2007 continued our program of investigation of rural Late Classic Maya food production. Unfortunately, our efforts to recover faunal materials from midden contexts have been unsuccessful. We do not believe the Late/Terminal Classic residents of Guijarral consumed no fauna. Based on ethnoarchaeological studies, and the contexts of faunal recovery at other Late Classic sites, we believe Guijarraleños disposed of faunal remains in ways that are not immediately archaeologically recoverable. As part of her ongoing ethnoarchaeological observations of modern Maya at the village of San Jose in

Peten, Guatemala, Kitty Emery (personal communication 2007) noted that, where fauna were deposited as trash, such remains were deposited farther from the house and in different locations than other trash. This was still usually within 50 m of the house, however, and if the Late Classic Guijarraleños followed the same practice we should still have been able to find them using our shovel testing regime. In addition, Kitty Emery (personal communication 2007) has found that most household faunal remains among modern Maya populations are burned, fed to dogs, or curated at hunting shrines. All of these practices (if utilized in the Late Classic), would contribute to diminished amounts of bone ending up on middens.

At other sites in northwestern Belize, faunal remains are rarely recovered from Late Classic contexts. Following the ethnoarchaeological observations above this may be more due to ancient disposal practices than taphonomic processes. At Lamanai, for example, faunal remains from Preclassic and Postclassic contexts have been recovered in large quantities. These are all very well preserved, but faunal remains from Late Classic contexts at Lamanai are virtually nonexistent (Norbert Stanchly, personal communication 2007). It is also widely believed that the inhabitants of Lamanai subsisted off the fauna of the nearby lagoon. Ancient cultural practice appears to be influencing the deposition of fauna and similar processes may be operating at sites such as Guijarral.

SUMMARY

Our excavations into two mounds yielded two sets of floor samples for future microbotanical analysis. The shovel-testing program completed 187 shovel tests and, while no faunal materials were recovered, we have a spatially discrete grid from which samples containing ceramic, lithic, and botanical remains were collected. Our work indicates that the Maya of Late-to-Terminal Classic Guijarral discarded their trash primarily to the west and south of the site, but how they disposed of their fauna remains unknown.

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EDUCATING WITH CONSISTENT CULTURAL CAPITAL IN A MENNONITE COMMUNITY

Dara Shifrer, The University of Texas at Austin

INTRODUCTION

Enduring gaps in academic achievement in America have been attributed in part to cultural dissonance between the school system and low SES and/or minority communities. In contrast to a popular conception of American education as an egalitarian contest system, in which the rewards are accessible by any individual with reasonable amounts of natural ability and effort (Collins 1971; Dance 2002; Suarez-Orozco and Suarez-Orozco 2001; Turner 1960), an alternative perspective suggests that by being founded in the values of the majority culture, the American education system actually serves to perpetuate social stratification (Bourdieu 1973; Lareau 2003). Children whose families operate within the same social sphere from which school system values are drawn experience advantages in cultural and social capital that lead to increased educational attainment. Though all groups develop capital that serves them well in some context, schools implicitly and explicitly value and reward students who operate and behave in accordance with the majority culture. It is suggested that validation and incorporation of diverse cultures into the school system might improve minority culture student achievement.

Though cultural capital and education interact along several dimensions, this study focuses on the influence of divergent values on relationships between the school and the community, as well as within the school. Lacking majority cultural capital has been associated with decreased parental involvement in the educational system, including a lack of faith in the system, not understanding the type of educational assistance that is expected to occur at home, and/or impaired communication with school authorities. Social distance between the school and the community can contribute to the creation of oppositional peer groups; diverse cultures can also complicate relationships within the peer group. In addition to teacher-student and teacher-parent relationships potentially being hindered by dissonant cultures, teachers face the challenge of valuing cultural diversity while still preparing students for a work world that is founded in majority culture values.

'Cultural sensitivity' is the notion that the education system should accommodate and celebrate non-majority-cultures in order to increase minority culture achievement. A counter argument to cultural sensitivity is that there are aspects of majority culture that are valid assets in both the academic and work world. School choice is a policy response within this debate; it is theorized that school choice empowers minority parents, enables them to pick a school with which they feel value alignment, and motivates schools to work harder to address the cultural needs of students. Religious minority groups also play

a "defining role in this debate" (Sikkink and Hill 2005), in the sense that they too experience cultural dissonance with the majority culture and often seek separate schools in order to protect their value systems. In essence exercising school choice, Mennonites are an ethno-religious group who have repeatedly migrated to countries seeking in part the freedom to educate without governmental interference. Since these separatist Mennonite communities are founded with the explicit intention of maintaining the integrity of the value system and their educational institutions are developed to align with and protect these values (Kraybill 1991), the Mennonites are an ideal group in which to explore the association between a constancy of cultural capital and educational relationships.

1 – Is there a confluence of values between school and community within a Mennonite settlement in Greenfield, Belize?
2 – If so, does a constancy of cultural capital improve the relations between teachers, parents and students?

CULTURAL AND SOCIAL REPRODUCTION

The notion of cultural capital originated with Pierre Bourdieu (1973) and has, though with some evolution, continued to play a central role in sociological research. Bourdieu (1973) described schools as agents of cultural and social reproduction, in which power structures are reproduced because the capital provided in schools is most easily accessed by those already in possession of cultural capital. In alignment with Bourdieu's notion of cultural reproduction, Paul DiMaggio (1982) found an association between cultural capital and high school grades; his results were mixed though and stronger for girls. These more classic conceptions of cultural capital have been criticized for being too deterministic, and for not allowing that the value of specific types of cultural capital may vary according to setting and time period (Lareau 1987; Lareau and Horvat 1999). For example, Lareau (1987) found that education, prestige and income play a more important role than religion, music, art, food or furniture in structuring educational relationships, and Tanner (2008) found that the highest achieving students may have some "elitist or highbrow" tastes but possibly like popular music more. Furthermore, it is argued that all groups have some sort of cultural capital, but that not all types of cultural capital are valued in arenas that confer status and power (Gamoran and Boxer 2005; Goldstein 2003; Lareau 1987; Lareau and Horvat 1999). In sum, the "legitimate" cultural capital within educational and occupational settings is determined by the dominant groups in society; the cultural capital that is rewarded in America encompasses the language, dispositions, mannerisms, tastes, etc. of middle- and upper-class Americans (Carter 2003; Dance 2002; Monkman 2005).

Randall Collins (1971:1011) portrays the American school system as having been founded "under the impetus of WASP elites." Employment is often dependent on conformity to the manners and values of the elite group, and schools have been described as institutions that train students for employment, not in specific job skills but rather in the manners and values of the elite group (Bartlett 2007; Collins 1971; Kraybill 1991;

Lareau 2003; Turner 1960). The association between social origin and educational and occupational attainment is an international phenomenon (Barone 2006; Collins 1971; Goldstein 2003), and is often linked to cultural and social reproduction within major social institutions, such as schools. Students who have already been exposed to the majority culture in their homes are advantaged over students with less exposure, and thus, immigrant, low socioeconomic status, and racial/ethnic minority students are most impacted by the continuing emphasis on white middle class values in the school system (Massey et al. 2002; Ogbu 2004; Suarez-Orozco and Suarez-Orozco 2001).

CULTURAL DISSONANCE

In contrast to children who experience a consistency between home and school, children from non-majority-culture homes have to work harder and/or make compromises to succeed in the educational setting (Bourdieu 1973; Lareau 2003; Suarez-Orozco and Suarez-Orozco 2001). While the size and diversity of America contributes to challenges faced by the education system, educational policies also reinforce the disadvantages of cultural minorities (Alesina, Baqir, and Easterly 1999; Wacquant 1998). Lareau and Horvat (1999:37) emphasize that it is important to understand the "individual interactions and interventions" within the theories of cultural capital and social reproduction. This study focuses on the association between cultural values and relationships between parents and school officials, teachers and students, and within the peer group itself.

Parents are believed to play a central role in the educational process (Coleman 1987; Epstein and Sanders 2000; Jencks 1981). Diverse cultural capital may impact parental orientation toward the school and education itself, as well as communication and relationships between parents and school officials (Graue 2001). A divergence in values between home and school may actually exist: in child-rearing philosophy, life perspectives, comportment, personal interaction, problem resolution, etc. (Akerlof and Kranton 2002; Eccles and Harold 1996; Kainz and Aikens 2007; Lareau 2003; Suarez-Orozco and Suarez-Orozco 2001; Valdes 1996). Alternatively, people of diverse cultures may share the same values, but develop feelings of resistance and hostility toward the persons of authority and the institutions of a majority culture that deny them full inclusion (Cooper 2007; Eccles and Harold 1996; Lareau 2003; Ogbu 2004). Ineffective communication because of diverse cultural capital leads to further misunderstandings of the expectations of both sides, thus perpetuating social distance and differences (Eccles and Harold 1996; Haynes and Ben-Avie 1996; Kainz and Aikens 2007; Lareau 1987; Lareau 2003; Suarez-Orozco and Suarez-Orozco 2001; Valdes 1996). Parental disconnect from the education system resulting from divergent cultural capital may directly and indirectly influence the educational experiences of the children.

Not only does cultural capital play a role in students' educational experiences at home, but it also impacts the relationships that students have with teachers and other peers. Students are greatly influenced by their parents' perspective of the school system and education itself and they are also impacted, in a more collective sense, by the community

of parents (Epstein and Sanders 2000); students from the community then form the peer group which has been shown to be a primary determinant in the average academic achievement at a school (Coleman 1990). The effective establishment of norms (with positive and negative sanctions) requires social closure (Coleman 1988); the positive academic effect of Catholic schools was attributed in large part to the strong social ties amidst a group of parents with shared values (Coleman 1987). Student success is associated with identification with the school, which may be hindered if the community feels disassociated from the school or if the students perceive cultural disrespect from their teachers (Akerlof and Kranton 2002; Crosnoe, Kirkpatrick Johnson, and Elder 2004). Students may respond to inferred censure of their background with hesitance to assimilate or outright rejection of majority culture, potentially forming an oppositional collective (Suarez-Orozco and Suarez-Orozco 2001; Ogbu 2004). Diverse cultures and values may even cause friction amongst the students themselves (Klein 2006; Turner 1960). Cultural constancy matters since student learning is founded in a network of social interactions (Akerlof and Kranton 2002; Crosnoe et al. 2004).

Teachers act as central mediators between the school and both parents and students, by forming relationships as well as by communicating the values that will be rewarded within the education system. Students who feel bonded to their teachers perform better academically (Crosnoe et al. 2004); in America, school and class size are the first deterrents to establishing solid student-teacher relationships (Akerlof and Kranton 2002). Additionally, not only are teachers' perceptions of their students shaped by their own background (Morris 2005), but race/ethnicity minority students reported liking their teachers less when the staff was predominantly white (Crosnoe et al. 2004). Teachers are more likely to have majority than minority culture backgrounds, which is a benefit in the sense that there is a congruence of values between the education system and its teachers (Akerlof and Kranton 2002; Lareau 2003), but a negative because of the risk of cultural separation between teachers and non-majority-culture students. Teachers are faced with the dilemma of finding a balance between the expectations of the institution and the individual needs of their students, which extends to choices in how curriculum and pedagogy are modified to suit diverse cultures, as well as the determination of which values and behaviors will be rewarded (Monkman 2005; Suarez-Orozco and Suarez-Orozco 2001). Dance (2002) actually defined teacher cultural capital as the ability to empathize with and relate to children of diverse cultures and backgrounds. Durkheim (1977) observed that an education system designed to suit the needs of the elite would cease to be suitable once it was extended to the masses, and it is possibly this tension that has necessitated the formation of new policies in response to diversity within the school system.

INSTITUTIONAL RESPONSES

While there is agreement that "consensus and continuity" in the American education system has decreased since the 1970s, it is uncertain whether education policy is headed toward collectivity or specialization (Akerlof and Kranton 2002; Gamoran 2001; Sikkink

and Hill 2005; Waite and Crockett 1987). Schools have "a choice between promoting a student ideal closer to economically useful cultural norms and skills and an ideal closer to the students' social backgrounds" (Akerlof and Kranton 2002). Federal policies, such as standardized testing and curriculum, are juxtaposed against the perspective that institutions need to recognize and value the strengths of diverse cultures (Yosso 2005; Yosso and Garcia 2007). Cultural sensitivity is a notion that the educator is responsible for sharing power by incorporating students' values into the curriculum and the classroom (Cooper 2007). Others argue that cultural sensitivity should not eclipse the fact that, even outside of power relations, there are values and behaviors within majority culture that tangibly benefit the process of learning (De Graaf, De Graaf, and Kraaykamp 2000; Kingston 2001), and that, moreover, differential preparation may only act as a disservice for students of minority culture who are entering a work world that is founded in majority culture (Akerlof and Kranton 2002; Lareau 2003). Delpit (1995) believes that it is possible to teach students the necessary mainstream "codes" while simultaneously validating their own culture. School choice is a response to the demand for specialized education (Putnam 2000), and has shifted from being religiously-based in America to something that some believe could enable multiculturalism and minority culture empowerment (Akerlof and Kranton 2002; Coleman 1988; Cooper 2007; Davies 1999; Suarez-Orozco and Suarez-Orozco 2001). Another benefit is that the voluntary nature of enrollment in non-public schools is symbolic of the parents, and, by extension, the students, assenting to a certain code of behavior (Bryk et al. 1993; Rose 1988).

Mennonites are an ethno-religious group who, in essence, have enacted school choice by migrating and establishing separate communities and schools, in an effort to maintain freedom of religion, culture, *and* education (Bowen 2001). For the Mennonites, education without state interference is a central means of maintaining the purity of their value system (Huxman and Biesecker-Mast 2004). Their history of migration is largely a result of governments backing out of agreements to not force them to participate in public entities, such as the military or the public education system. In the 1870s they migrated to Canada from German colonies in Russia, and then as Canada began to intercede in Mennonite schools after World War I (largely because of general distrust of all things German), more conservative Mennonites migrated to Mexico; some of the Mexican Mennonites then migrated to Belize and Paraguay in the mid 1900s (Goodman 2003; Hall and Kulig 2004; Parker 2005; Sax 2004; Treaster et al. 2006). Mennonites are ultimately non-conformists, refusing to assimilate to majority cultures, in an attempt to protect what they perceive as the legitimate cultural capital (Kraybill 1991). By separating from majority cultures and establishing closed communities, with the specific intent of maintaining the purity and homogeneity of their value system, Mennonites are a group in which the idealized educational setting of cultural capital harmony between social institutions may occur. Will constancy in cultural capital, or homogenous values, actually result in improved relationships and increased understanding between parents, students and teachers?

There are other aspects of the Mennonite social order that should facilitate harmonious educational relationships. Despite their refusal to assimilate to other cultures, Mennonites do have strong expectations of conformity within their own community, which is fostered by "communal boundaries" and internal supports that create community self-sufficiency (Coleman and Hoffer 1987; Gingrich and Lightman 2004b; Huxman and Biesecker-Mast 2004; Lee 2003). Small communities in general are thought to engender a concordance of values, trust, understanding, and cooperation (Bernstein 1977; Dubinsky 2006). Studies of both ideal communities and schools describe intentional efforts at synchronizing values and fostering relationships as key to promoting faith in social systems (Johnson 2002; Putnam 2000; Sikkink and Hill 2005). Especially pertinent to Mennonite communities, churches are identified as institutions that can solidify values and create social capital within and between school and communities (Coleman 1988; Johnson 2002; Sikkink and Hill 2005). Lastly, common good and mutual aid, tenets of the Mennonite faith, should improve interpersonal relationships (Goodman 2003; Roessingh and Schoonderwoerd 2005). Because of these reasons, separatist religious groups have been identified as opportune for exploration of "specific forms of community organization and interaction" (Gingrich and Lightman 2004b:175; Zehr 2006).

METHODOLOGY

Mennonites are alternatively defined by "ethnic, biological, cultural, historical, religious, and denominational boundaries" (Gingrich and Lightman 2004a:512), but regardless, it is fair to say that their religion and culture greatly inform each other (Hall and Kulig 2004). Along with groups like the Amish and Hutterites, Mennonites are Anabaptists, believing in adult baptism, pacifism, and a literal interpretation of the Bible (Hall and Kulig 2004). The Anabaptists, beginning in Switzerland, South Germany, Austria and Holland, were considered the Radical Reformers within the Protestant Reformation of the 16th century, rejecting both Catholicism and the emerging forms of Protestantism (Gingrich and Lightman 2004a; Huxman and Biesecker-Mast 2004; Kraybill 19991). Anabaptists sought a more strict separation of church and state and practiced non-violent resistance (Goodman 2003; Huxman and Biesecker-Mast 2004; Warner 2006). Mennonites still practice separatism – being "in the world but not of the world" – which is accomplished through closed communities, locally-controlled education and the maintenance of *Plautdietsch*, a Low German that is not even spoken in Germany anymore (Gingrich and Lightman 2004b; Hall and Kulig 2004; Kraybill 1991). The Mennonite history of migration is alternatively attributed to straightforward persecution from Catholic and Protestant governments; differences with governments over their refusal to pay taxes, participate in the military, and/or educate their children in public school systems; and land shortages and climate issues (Bird 1967; Bowen 2001; Huxman and Biesecker-Mast 2004).

The Mennonites in this study live in Greenfield, Belize, a community that was settled in the 1950s. The majority of their relatives and connections are in Canada but the community migrated most directly from Mexico because of land shortages and other

tensions (Roessingh and Schoonderwoerd 2005; Woods, Perry, and Steagall 1997). Belize is a small country of very low population density in Central America; the official Belizean language is English although it is primarily peopled by mestizos, creoles, indigenous people and the Garifuna (Woods et al. 1997). The Mennonites have become an economic mainstay in Belize, introducing "multilatitude commercial agricultural production on a large scale" (Goodman 2003; Woods et al. 1997); economic success in Mennonite communities tends to coincide with decreased religious conservatism (Roessingh and Schonderwoerd 2005; Sax 2004). Old Order or Old Colony are the most traditional Mennonites, defined in part by their greater resistance to assimilate and "their simple agrarian lifestyle, plain dress, and the forbidding of private motorized vehicles for transportation" (Bowen 2001; Gingrich and Lightman 2004b). As evident by the motorized vehicles, televisions, Western-style clothing and even internet access in Greenfield, the majority of the approximately 700 residents of Greenfield belong to the less conservative Evangelical Mennonite Mission Church (EMMC). The Old Colony roots of the community remain, though, through their alliance, and even blood relations, in the nearby community of Tall Tree Hill.

Educational philosophy is another major difference between Old Order and less conservative Mennonite churches (Gingrich and Lightman 2004a). Old Order schools still teach classes in Low German, only progress through the 8th grade, and focus on basic reading, writing and arithmetics (Sax 2004). In contrast, the Greenfield community now offers (and some say, require) schooling through the 12th grade. There are three school buildings within walking distance of each other: the first building houses Level 1 (Kindergarten through grade 2 as well as the Special Needs class), Level 2 (grades 3-5) is in the second building, and the third building contains Level 3 (grades 6-8) downstairs and Level 4 (grades 9-12) upstairs. The school, with an enrollment of approximately 150, has some students from outside of the community but draws mostly from Greenfield. With split shifts and combined grade levels due to small class sizes, 13 to 15 teachers were employed for the school year of 2007-2008. According to the 2006-2007 yearbook, three of the 16 teachers were men and the vast majority were white. There was more racial diversity in the student body.

This study is based on semi-structured, open-ended individual interviews conducted during the summer of 2007 with 20 current residents of Greenfield and 1 resident of Tall Tree Hill, as well as participant observation during the summers of 2007 and 2006. The interviews lasted from one to two hours and were conducted in a quiet corner with a table in the main general store or in the respondent's home. The 21 respondents ranged in age from 13 to 43 and included fifteen females and six males; the interviews were conducted with 7 students, 7 teachers, 4 education administrators, and 3 parents (additionally, some teachers and administrators were also parents). In addition to collecting data on the structure and nature of the education system in Greenfield; beliefs, attitudes and behaviors pertaining to the church, the community and the school were explored. The interviews concluded with questions regarding the purpose and value of education, as

well as personal demographics and goals (particularly for students). The questions were slightly adjusted within those general themes to account for age and role differences between students, parents, teachers and school administrators. Because of the "shyness" of the Mennonites, as noted by a respondent, and their documented discomfort with technology, I chose to not videotape or audio-record the interviews. All respondents indicated that they were comfortable with me typing on my laptop while they spoke, and, because I type from 80 to 100 words per minute with high accuracy, I was able to capture their responses in near totality. To enrich the data, I focused on mentally recording details about the setting as soon as I was on-site, and went over the interview notes as soon as possible after the conclusion of the interview. It should be noted that grammatical idiosyncrasies in the local English dialect were left intact.

Initial contact was made with this community through my alliance with a research project that has been stationed in the area for over ten years. Participant observation was enabled through the business and personal relationships that have developed because of the Greenfield Mennonites' long-standing provision of a variety of services (laundry, banking, eggs, etc.) for the research project. The project has particularly close alliances with a family that is central, in terms of leadership and business, in the Mennonite community. A member of this family, who had a history of involvement with the local school board, acted as my "gatekeeper" (Lofland et al. 2006), or vouched for my legitimacy and arranged my first interviews with key contacts within the community. In addition to maintaining communication with my gatekeeper, I used the "snowball" method, asking interviewees to refer friends and family to also be interviewed (Lofland et al. 2006). Lastly, I stationed myself at the main general store in the community, far surpassing the only other store both in centrality and available goods, and approached people to ask for interviews or referrals to other likely interviewees. In part because of the community's increasing distance from more conservative traditions, and a hesitance at being unhelpful, there were only a few instances in which people declined to be interviewed. To maintain a positive image of myself in the community, I was flexible about rescheduling missed appointments and also wrote personal thank you notes after each interview.

To begin coding these interviews, I used the "Outline" view in Microsoft Word to list the basic themes with which I had approached this project, as well as those that emerged during the interviews. Reading through each interview, I copied and pasted excerpts into each area of the outline to which they were applicable. To retain confidentiality and anonymity, each respondent was assigned a number, which is the only link between their identity and the coded quotes. As I worked through interviews, new themes and subthemes emerged, some of which required that I go back through interviews I had already coded. Digitally coding facilitated the maintenance of a simultaneously micro- and macro-perspective, as well as continuous re-organization, of the themes. By toggling Word's "Document Map," I could view and maneuver through a 9-level listing of my headings and subheadings in a sidebar on the left-hand side of the screen, while the full

text was still visible in the main portion of the screen. My end product was a 210-page document that is a thematic synthesis of all 21 interviews.

RESULTS

This section will summarize the respondents' reports of values of the school, the church, and the community. The school and, in essence, the community, were founded by the church, and the continuing interaction between these institutions will be described. Following the comparison of values across institutions in this community, the associated communication and relationships between community members, parents, teachers and students within an educational context will be explored. The paper will conclude with a description of how cultural capital operates within this small community and the implications that this study has for education in America.

Values

A dissonance in values is thought to contribute to parental and community disconnection from the schools that serve them, and to also impair student-teacher and student-student relationships. Mennonites form separate and isolated communities partially as an attempt to maintain the purity of their value systems, and the social institutions of the community are created with the intent of maintaining the integrity and cohesion of this system of values.

School Values. The respondents' descriptions of what is valued by the school can be grouped into four major themes: spirituality, education, community and interpersonal relations. Valuing spirituality within the education system was described by some as instilling morals into the students, both in the sense of sharing in the Mennonite faith and general good citizenship:

> ...As teachers, it's spiritual too, pray everyday for those children and parents… value where they are at with their faith…

Kraybill (1991) also described a focus on "church-relatedness and bible-centered" education in his studies of Mennonite schools. Although religious groups like the Mennonites are historically noted for discouraging education (Sikkink and Hill 2005), an increased emphasis on educational attainment has coincided with this community's movement away from the Old Order traditions. The majority of the respondents described a collective push for more education, which is primarily completion of the 12th grade in Greenfield, although some youth have begun attending college in America or Canada. Interwoven with the increasing value of education is the school's focus on bettering the community, engendering "a better society." The desire for increased education levels was in part a result of the community's realization that their economic livelihood had become more dependent on the outside world. The community hopes that students who further their education outside of Belize bring the knowledge and skills back to the community. In concordance with valuing the community, the maintenance of good interpersonal

relationships – between the teachers, students and parents - was mentioned several times as a value of the school system. Private Catholic schools in America also emphasize "community" (Bryk et al. 1993). By remaining separate from the Belizean public school system, Greenfield is able to cultivate a school system founded in the cultural capital of their choice.

Church Values. Similar to the values of the school, respondents' descriptions of the values of the church fit within the themes of spirituality, mission work, the youth or education, the community, and the family. The Mennonite spirituality is bible-based, and it is emphasized that beyond having faith, members should incorporate god into their everyday lives and even have a "personal relationship" with god.

> … I think the church is trying to just make sure that our people are aware of God's plan of salvation and that we accept it and that we live by the standards that God set forth for us – not just here but wherever we go – that's very important to this community...

"Wherever we go" is an example of the increasing tendency toward evangelism that also separates these less conservative Mennonites from their Old Order brethren, having started to value mission work over reticence and separatism.

> … It's kind of been taking a back seat [mission work] for a long time… kind of like a global picture… I would say it's kind of like they focus mostly on their immediate family and how it is here and then once they have that, then they work on missionaries… the education has made it easier for people to focus on other things than farming and focus on what's happening outside Belize, Mexico, anywhere…

There are also perceived benefits for the church within the increasing emphasis on education: "… I guess you could say education because a lot of our energy of the church is spent into the school and as soon as they're finished with their school, the church looks to them to provide leadership…" Mutually reinforcing, the community is also a central concern of the church:

> … but bottom line, we're a community that cares about each other – we're close knit – when push comes to shove, we can really count on each other… something that the church is teaching as well: to support each other…

Preserving the structure of the family was mentioned as a value of the church several times: "keep the family structure" and "that families will have a relationship that is valued." Hunsberger (1976) found that Mennonites emphasize and retain their religious beliefs moreso than liberal Protestants and Catholics; the positioning of the church as central in Greenfield, as well as its subsequent involvement in all of the other social

institutions of the community, reinforces these religious beliefs and values as the majority cultural capital that will reap rewards within the community.

Community Values. Mirroring the values of both the school and the church, Greenfield residents' descriptions of community values included spirituality, community, mission work, education, interpersonal relationships, and family and children. Their spirituality was described as "walking in that faith," "developing a personal relationship with God" or, in less specifically religious terms, such as having good morals, values, etc. In addition to shared beliefs, a "strong, vital community" is a defining characteristic of Mennonites (Roessingh and Schoonderwoerd 2005; Waite and Crockett 1987:120), and thus the community itself is valued by Greenfield residents. A respondent's statement, "… what is here stays in here, and a lot of the community, they are scared of new things coming in… made a lot of rules and made it very private…," coincides with Gingrich and Lightman's (2004b:175) description of separatist Mennonite communities as participating in "a collective refusal to participate in the benefits and conveniences available to most." Separatist communities are described as putting the common good ahead of the individual, and developing internal resources to solve problems (Gingrich and Lightman's 2004a), confirmed by a respondent's observation:

> … what we're striving for is to get the community to grow but for the betterment of the community… that everyone is unified – not for the individual – that we work together… when there's a business and let's say there's two businesses of [the] same thing in the community, there will be competition but they want there to be peace between the people…

Likewise, the importance of interpersonal relationships was emphasized in descriptions of community values, in alignment with a German term, *Gemeinschaft*, that describes the centrality of relationships in Mennonite communities (Gingrich and Lightman 2004a, 2004b): "… to get along with people even though it's not easy." Family and oftentimes friends were mentioned in the majority of the interviews as highly valued in the community. In concordance with Gingrich and Lightman's (2004b) finding of "unexpected tolerance of and respect for nonmembers," a Greenfield citizen described "respect for the next person… doesn't matter their race, rank or social status" as a value of the community. Education was described by many as a value that is becoming increasingly important to the community. Mission work was also mentioned as a community value: "would hope to see them serve God – that is really my dream – would love to have my kids go as missionaries but they can serve God here as well" and "just trying to be a productive person to the world – when you die, say, I did something! – being satisfied with achieving or succeeding." Separatist communities are founded on the basis of shared beliefs, and, in turn, these shared values serve to reinforce and maintain the integrity and strength of the community.

Interactions between School, Church and Community. This congruence of values between the school, church, and community arise from and are maintained by the intertwined operations of the three entities. Mennonite communities are described are being organized around the church or congregation (Roessingh and Schoonderwoerd 2005; Warner 2006), and the church interacts with the Greenfield school on several levels. The EMMC church opened the Greenfield school in approximately 1981 and still provides some of the school's funding; refusing to accept government funding was specifically cited as a means of preventing "government meddling." In addition to the approximately $20,000 annually contributed by the church, all church members over the age of 18 pay a school "tax" of $100 per year, as do non-members who have students enrolled in the school. Though the school will accept students from outside of the EMMC congregation, school board members are elected by the congregation and must be EMMC church members. In response to the resulting concern that not all of the students' parents have a voice in school decisions, the pastor wryly replies, "we are very clear that this is a church-run school… and that we are very open to new members in the church." The school was described as a "department of the church," and any school issues that require intervention beyond the school board go to the church council, comprised of all of the chairs of the different departments of the church. Though the school manages its own finances and has begun to receive funding from community businesses, it will turn to the church in times of financial trouble as well. Lastly, the school's graduation ceremonies and Christmas programs are held in the church.

Schools have been described not only as important physical structures in Mennonite communities (Parker 2005), but have also been attributed with creating social networks and "strong social interrelations" (Roessingh and Schoonderwoerd 2005:69). The Greenfield community, including those without students, has many opportunities to interact with the school. The annual open house (in which parents watch a class in progress), the science fairs, school board meetings, school parties, field trips, and the annual picnic at the end of the school year were all cited as events that were open to the whole community. Nonetheless, it was noted that community members with children in the school were far more likely to participate in such events than community members without students. Connectedly, though community members are involved in the school in the sense that all pay the school tax, it was mentioned that "some older people complain about the tax…" A respondent expanded on community members who feel disconnected from the school: "not so many people come out [to school functions] because it's [education/schooling] still foreign to the community."

Nonetheless, the community at large is exposed to the school through events that are held at the church, such as school-sponsored programs or performances that are integrated into services and the graduation ceremony. Lastly, the community is indirectly involved with the school through the collective care-taking of the youth:

> …everybody from 5 can drive a scooter and drive about town, and if parents don't stop them, they can and will drive about town after school… community's so small that everybody finds out…

Parker (2005:35) described "the triad of the family, the church, and the community as forming the basic structure for the continuation of the ethnic identity," and this triad is described as a sharp contrast to the minute subdivisions of American society (Waite and Crockett 1987). Coleman and Hoffer (1987) found that students at Catholic schools benefit from the extended religious community of parents, and, likewise, the constancy of values across social institutions in Greenfield should enable more frictionless relationships between teachers, students and parents. This is best exemplified by respondents' descriptions of this "trinity" of church, school and community in Greenfield:

> …I think in this community, church is definitely the center but at the same time, we have our home, and then we have our school, and then we have all these different social functions – you can't have one without the others…

Another respondent described the three institutions: "…it's almost like they're the same entity…" As noted by Waite and Crockett (1987:120-2), "… the strength of their [Mennonites'] education lies in the coordination of all the social agencies of which the children are part—home, church, school, culture, and community… Each… sends a consistent message, and that message is reinforced by all the others." Respondents directly and indirectly reported a constancy of values between the school, church and community, a constancy which is continually reinforced by formal and informal interaction between the three institutions.

Educational Relationships

The act of educating occurs through a series of social interactions, and school environment and student success are often associated with the state of relations between the school and the community, or parents, as well as the relationships between the teachers and students, and within the peer group itself. A lack of dissonance between the community and school officials facilitates the exchange of information and orientates the students' attitudes toward schooling and education itself. Students who experience continuity between their homes and the school will find it easier to adapt to the school environment and potentially be more likely to "buy into" the mission of the educational institution. The teacher's ability to relate to and connect with the students informs the school and classroom climate, as well as student motivation and learning. Lastly, shared values and culture should also contribute to less friction within the peer group. In sum, a constancy of values should improve the nature of educational relationships, and thus the process of educating.

Parental Relationships. The relationships between parents and the school in Greenfield were explored through parental support of and assistance in the educational process, organized communication between parents and the school, actual interaction between parents and the school and teachers, and parental response to the school and teachers. The level of parental participation in the education process – including helping with homework, providing an enriching environment, or simply encouraging education – "depends a lot on the parent." Partly because of elementary teacher expectations, reading was the subject in which parents most often helped at home. It was observed that some parents simply don't have the educational background to be able to assist their children, although siblings were another option for homework help. Other reasons for a lack of parental assistance with homework included: coming from a "broken home" (not common but happening "more and more") or not valuing education:

> … if it doesn't happen [help at home], it's families that come in from the Old Colony who don't understand the education system – or in separated homes where the mom has left… where they don't have parental guidance at home… where they're just under guardians…

Though both parents and teachers described parenting as a process of encouraging development and that parents play "a very important role in shaping them [children]," parental education levels also impact the level of educational stimulation in the home. Respondents concluded that the majority of parents do encourage a basic education and achievement, but that the real differences were in the level of educational attainment perceived as satisfactory by parents.

Although an increased emphasis on education was a key component within separating from the Old Colony tradition, the value placed on education still varies widely across community members and tends to be associated with religious conservatism and the parents' own life experiences: "think they can see the importance of education now but having grown up all their lives thinking otherwise…" As one woman with adolescent children observed:

> …it's changing – that first generation that broke away (my parents and my husband's parents)… my husband's parents never finished school – their children went to school further but none of them- those who grew up and stayed here none of them graduated – over here not so much but it's slowly changing… these parents are pushing their kids to graduate – first graduation was 10 years ago…

The community still has close ties, or even relatives and friends, in Tall Tree Hill, the nearby Old Colony community.

> … there are some people, to a certain extent, they do grade 8 and then they let kids choose and I don't think that's wise because not ready to make that decision. I think that's- a big part of our community still think that as long as have basic math, reading, and writing, then okay…[standard curriculum in Old Colony schools]

As many of the Greenfield parents only completed 8 to 9 grades, completing high school is perceived as an accomplishment and college as optional: "… oh yeah, I believe they have to finish grade 12 and from there I believe it's their decision if they choose college or not…" The community was originally structured so that education was not requisite for economic prosperity, but in concordance with the increasingly outward focus of other Mennonite communities who have undergone "differentiation of the churches and the flourishing of business" (Roessingh and Schoonderwoerd 2005: 72), the perceived need for education has increased along with increases in business interactions outside of the community:

> …lot of our successful business men here are dropouts – they're not the high educated but we know that we need education with the way the world is going – with the high technology – we kind of make it mandatory… if I had more I could do that- the computers…way the whole world is going… I need it to do workshops to promote my product – I need to go out there and show pictures of my livestock…

In several instances, education being valued by the parents was associated with higher levels of attainment in their children: "my son tells me that, 'I don't need to graduate from high school'— son says, 'I can just work in the fields'… that's when the parents come in." In sum, parents' involvement in their children's schooling and attitudes toward education are embedded in economic realities and the interaction between the cultural capital possessed by the family and the transitioning religious and education beliefs of the community (the majority cultural capital).

The community at large is involved in the school system through informal and formal avenues, including many facets of policy decision-making. Occurring 2-3 times per school year, parent board meetings are the primary means of organized communication between parents and the school system. Parents have input into decisions regarding curriculum, dress code, grading, promotion policies, school activities, the school calendar, and attendance costs. Though one parent remarked, "I don't have a say in every itty bitty thing, but I don't want to – that's what a school board– if every parent was allowed to have say, can you imagine the chaos we would have?," many respondents reported that parents were too involved in the decision-making processes of the school: "… I think that parents have too much say in the school, and the board will more respond to the parents than the teacher if they have an issue with a parent…" Teachers' grades are

submitted to the board for final determination, and one teacher attributed the promotion of kids "who should have stayed back" to parents being "in denial."

In terms of decision-making, the curriculum was and continues to be the biggest source of recent educational conflict among the community. Though Tall Tree Hill still uses a traditional Mennonite school curriculum, emphasizing the bible and using only German (Bowen 2001), the Greenfield school has been using less traditional curriculums and teaching in English for several decades. In the 1970s, the school received used textbooks/curriculum from Canadian contacts, but then switched to an Amish curriculum, called Christian Light Education (CLE). There is no community disagreement in regards to the incorporation of Christianity into every subject, and the emphasis of creationism versus evolution. The switch in the early 2000s to a Christian and traditional curriculum called A Beka is attributed by some to a desire to increase academic standards, and by others, as an effort to further separate from more traditional perspectives:

> … CLE is Amish… books were not colorful… it's required that ladies have this- head covered – and we really don't think that they have to – they can if they want, but they're not forced to – the ladies can have the hairstyle they want…

Though A Beka was voted in with the required majority vote of over 67% of the parents, it was a major point of contention at the time and continues to be a sore point with those who were against the curriculum.

> … they thought it would be better and turned out to be the same… fighting, fighting, fighting to stop it, because back then I had so much information on A Beka – we didn't believe [that we should just] listen to parents – we did our own research – few that said it wasn't better… we had a vote on it – I was a parent – I was against it – I knew it wasn't what it would be… if the people were fighting for it so bad, I would say be willing to accept [that] it was as easy as they said – hard for them to admit because it became a big issue to see who would win – few of those couples who fought so hard for it, their kids didn't go to school because it was just the opposite what they had preached – said they didn't want to admit it – if it's a mistake, then admit it…

CLE was an independent-study curriculum, in which students worked at carrels at their own pace, while A Beka was described by respondents as being designed for group teaching, being more explicit, and having a great phonics/reading program and more high-level courses. One teacher attributed declining student achievement levels to continuing parental dissatisfaction with A Beka. Despite abounding evidence of a consistency of values throughout Greenfield, distinctions were made within this small

range of values, resulting in discord similar to that which is often attributed to divergences in cultural capital in American schools.

In addition to organized communication between parents and the school, several other informal opportunities for communication are available. Interaction can occur between parents and school officials at the open house, the science fair, spelling bees, parent-chaperoned field trips and parties, the end-of-the-year picnic, the Christmas program at the church, and the graduation ceremony. Parents also act as substitute teachers and are responsible for doing repairs at the school. Interacting with the school was described as the norm, particularly for mothers, though there are "some, of course, who hardly ever show up… some families who are struggling with family problems – in some cases the wife has left – those parents draw back and don't participate… at same time, those are also ones who don't participate in community functions period." The consensus was that most parents are happy with the school, as one respondent summarized: "I would say 80% are happy, 15% are not, and 5% are 'eh.'"

Several examples, though, were provided of instances in which parents were not satisfied with the school system, including disagreement between parents and school officials over the curriculum, discipline, grades, attendance policies, school hours, candy in the classroom, and the dress code. The discord was described as sometimes devolving into a power struggle between parents and the school system, often arising from a sense of alliance with their own child:

> … there is a fair amount of interference from some of the parents – not many but some – that has created a lot of conflict in the school… and this is the exception rather the norm… because this a private school… if their children don't do well, there has been major conflict coming out of that – some of the parents have moved away on account of that – the criticism is that they want to protect their little Johnny – if there is punishment, not a lot of them stand up with the teachers like they used to – phenomenon you see everywhere…

Parental involvement was linked to dissatisfaction with the school system:

> … the board should decide more what is going on than – because they interact more with the staff and sometimes I think they are more informed than the parents are – sometimes it's more of a wish or a fantasy that parents have, that they would like to see implemented, and it doesn't work and causes problems…

While, others felt that distance from the school system created more discord:

> …tense, yes – I think usually it rises more from those who are not as involved in the school – because people who are not involved usually don't see the bigger picture – that would usually be the case – the more involved you get, the more you understand why you might need to have a policy that off the top of your head might seem silly…

In contrast to theory, the size and intimacy of the community was perceived as contributing to discord in the school:

> … that's another thing in a small community, if board decides something, they have to change it to suit the parents – parents wanted to ban candy and board fought it and fought it, and we fought it, and it was horrible – that was the first time the board took a stand… with a big issue – not always dealt with right away – which is very upsetting for the teachers… sometimes need more action and less talk – everyone's related to everyone – don't want to step on toes or hurt feelings – worse in smaller communities…

Though, on some levels, the consistency of cultural capital within the community acts as the foundation for shared goals and cooperation within the educational setting, the small size and intimacy of the community were also described as factors contributing to dissension and discord between parents and the school system.

On a more micro-level, interaction also occurs between parents and individual teachers. In addition to the meet-the-teacher night near the beginning of each school year, teachers and parents are encouraged to maintain contact with each other throughout the year. Parents are able to make school visits, whether it be making an appointment with the teacher or stopping into watch a class. Though not characteristic of all parents, there are many types of informal parental outreach to teachers, including phone calls, visiting the teacher's home, inviting the teacher to a meal at the parents' home, or talking at community events. Parents and teachers are encouraged to resolve any problems that arise between themselves before going to the head teacher or school board. Some respondents highlighted the high teacher turnover rate as a factor in communication problems between teachers and parents. Another respondent thought that implementing formal and regular parent-teacher meetings, at report card time, for example, would cut back on the misunderstandings that do occur.

Though teacher and parent relationships were generally described as positive, variation most often occurred because of a parent's perception of education in general or because of a teacher's status within the community. Though one teacher described the communication and support from Greenfield parents, and the associated alleviation of discipline problems, as markedly better than the experiences of her friends teaching in Canada, most respondents stated something akin to "there are always those that don't

agree with the teachers." Negative responses to teachers were attributed to parents exclusively aligning with their child, generally finding fault with the teacher, or not valuing education. Some parents were described as "taking the side of their children all the time" or finding "it hard to admit to their child's failures." Another respondent decided that "parents who are really supportive are ones who have a little more education (just off top of head)." In alignment with evidence from research that conservative religious curriculum is founded in the "practical, not the theoretical nor the speculative" (Ediger 1998:2), parental support was also linked to changing perceptions of religion and education in the community:

> …this community is kind of in a transition from being focused more on experience rather than on education, so you would probably get 50/50… half the parents would say, 'well, you better do what your teacher says, because your teacher knows best when you're at school'…

Parents whose educational values, or cultural capital, do not align with those of the community at large, experience more discord with the school and teachers. Some of the dissonance though should be attributed to individual difference and the nature of human interaction.

Though parent respondents made distinctions between individuals in their descriptions of relationships with teachers, there was consensus on the impact of community size and teachers from outside of the community (heretofore referred to as "outsider teachers"). In concordance with Putnam's (2000:351) observation on the negative aspects of high levels of social capital ("restricts freedom and encourages intolerance"), the size of the Greenfield community contributed to high levels of gossip and low levels of privacy.

> …the other setback though is, we have a teacher from here, everybody knows their past… as Christians we're supposed to forgive and forget, but sometimes we don't clean out the closet all the way – leave the skeleton back there – somebody remembers – [with] some of the discipline issues: 'I know why he did that! Remember last year, you didn't like me and now you're getting back at me!'… being familiar isn't always…

Outsider teachers experience an entirely different set of challenges: "some teachers find it very difficult to communicate with parents… for a lot of them – when they're new to the community…" The community has "different issues with teachers from outside," as one respondent explained: "teachers that grew up here know how our community works and know the people." The respondents identified benefits and drawbacks from hiring outsider teachers, and some conceded that it depended on the individual. The benefits of outsider teachers included their fresh perspectives and ideas, and their advanced knowledge on postsecondary schooling. Respondents stated that it "does enrich our lives to have other people come in and learn from them" and that "sometimes we compromise,

sometimes difference is okay – something we can learn from." The small size and closed nature of the community had led to genetic defects in recent decades as a result of procreation between closely related individuals, and so outsider teachers also act as a means of bringing new blood into the community. Several outsider teachers have married and stayed in the community. Despite these positives, the larger consensus would be that:

> … I think getting teachers from here helps a lot more for that part in the values and the way that these students have been brought up and have the same situation – they'll be able to understand them better…

Teachers are most often faulted for decisions they make regarding discipline or grades, or how they comport themselves in class (or in the community), with outsider teachers especially at a disadvantage:

> … there was a teacher this year – she just resigned – she had graded different – she came from England – was not used to our curriculum – she gave the kids very good grades – when they misspelled a word she would just leave it – some parents thought that kids hadn't learned as much as they should – they gave her a hard time and she resigned…

Since many of the school's standards are stricter than schools outside of Greenfield (in terms of dress code, comportment, etc.), "not necessarily everybody from outside agrees with or is able to understand." "I would tend to say that teachers from our community tend to understand parents more – why they think the way they do – not to try new things because know how parents will react to it…"

In sum, despite the small size and homogeneity of Greenfield, some variation in cultural capital exists across community members. Since the school system, as in America, is founded in the cultural capital of the dominant members in the community, parents who are not transitioning as quickly or in the same direction feel more of a disconnect from the school and its officials. Parents perceived outsider teachers, deficient in the local cultural capital, as unable to fully understand the goals of the school and as less successful at communicating with and relating to parents. It is also important to note, though, that dissonance occurred between community members and between parents and teachers that cannot be directly attributed to variation in cultural capital.

Teacher Relationships. The central role of teachers in the educational process requires an ability to relate to the students, inspire motivation, and effectively communicate information. The teacher-student relationship is also dependent upon effective communication with and support from the parents of these students. Sharing the cultural capital of the community should enable better relations between the teacher and the community and students. Because of a deficit of able and/or willing candidates within the community, Greenfield has resorted to hiring teachers from outside of the community,

largely from Canada or the United States. The teacher turnover rates are high, particularly for teachers who are not from Greenfield, because of the remote location of the community and their inability to pay at competitive rates. New hires also tend to be young first-year teachers, some of whom perceive Greenfield as a place to get experience and then move on. Though finding candidates with values similar to those of the community is central to the hiring process, they have been forced to make concessions in their requirements, such as not requiring that the new hires be Mennonite. Requiring that the candidate is a "professing evangelical Christian," as documented on the application, and that one of the three references be from a pastor, is an attempt to compensate for these concessions. In addition to recruiting through a website, they also use contacts in Canada and promote the openings as "mission" opportunities. Bryk et al. (1993:142) also found that teachers in American Catholic schools described their work as a "ministry," "vocation," or "calling."

Through isolation and by retaining control over its own institutions, the culture of the Greenfield community reigns as the dominant cultural capital. Thus, a divergence of values in the educational setting occurs largely as a result of hiring outsider teachers. In the 2006-2007 school year, 4 to 6 of the 16 teachers were outsider teachers. Although there were consistencies among outsider and local teachers' descriptions of teaching in Greenfield, the divergences in cultural capital tinted the perspectives of the outside teachers. Positives cited by teachers in general included the act of teaching, loving the students, and that "light bulb" moment. All teachers reported enjoying the community's high levels of interaction and its commitment to compromising toward "the good of everyone." Though teachers from the community may have more difficulty than outsider teachers in separating the personal from the professional issues, they are generally advantaged by their existing relationships and comfort within the community. In addition to the general teacher frustrations of not being able to reach some kids, difficulty in disciplining, and being perceived as a teacher even when off the clock, outsider teachers reported loneliness and not understanding the culture as difficulties of the position. One outsider teacher described finding "it hard to get into their lives and hearts." This observation from a community leader expands on this idea that the locals are resistant to embrace outsiders:

> … and then the gossip – small town, eh? – I call it 'the weekend court' – that's something the teacher gets in the community… they're strangers, so the parents don't feel comfortable talking to them – so they go and talk to another mom: 'so how do you feel about this?... I don't like what the teacher's doing'… 'hadn't thought about it!'… then it's two… don't connect with the teacher because from outside…

Though distrust of outsiders, harbingers of worldliness, is part and parcel of the Mennonite faith, a hesitance to engage with newcomers also results from the high rates of teacher turnover in this community; one teacher related that community members find it

"hard to open up because lots of teacher come for one year and then they leave – once told them that staying another year, relationships have improved so much…"

Outsider teachers not only faced the added challenge of finding a way to accommodate both their own values and those of the community within the classroom, but also had to understand and embrace this new culture in order to forge positive relationships with the parents and the students. In addition to logistical drawbacks to hiring outsider teachers – having to pay for their basic needs (housing, visas, etc.) and high turnover rates – respondents discussed the negative impact of these teachers' cultural differences: "have had lots of problems with how they dress, talk and behave with people…" Shared religious beliefs are a key mechanism for moderating differences: "… [we will] hire non-Mennonites – prefer Mennonite because of cultural background – don't think it has anything to do with race…," but even Mennonite outsider teachers were not exempt from struggling to adjust to the new culture:

> … different than they [Canadian Mennonite teachers] thought over emails because we have our own system of lifestyle … sometimes when they come here it is totally different – if I would go there, the first year or two would be hard because I think all those people are crazy – the way they have it… but that system works there and this system works here… and I always say, if I want to go – wherever I want to move to – the US, and become a US citizen – wherever I'm going to settle down, in that area I have to adjust myself to that place…

Outsider teachers also experienced language barriers, with English-speaking teachers at a disadvantage with a student body comprised of bi- and tri-lingual students, as well as some students who spoke only German or only Spanish.

> … what has happened here is we get Spanish kids in school and teacher had no clue what the kid was telling her in Spanish and then she would come later to the school board and want to know what the student had said to her and you didn't want to tell her because actually it was very wrong… it was an insult – she thought it was something funny – she laughed – she wanted to know what the joke was – it would get too bad...

A conclusion from one outsider teacher – "… [I] came with [the] attitude of changing the community… well, this is not working – have to change myself…" – speaks to the challenges faced by many majority culture teachers in classrooms of minority culture students across America.

The primacy of the local culture is evident in this statement: "teachers from inside have an easier time with the parents – we, as a small community, we know what we are used to." Teachers who are deficit in this majority culture experience a different reception

from the community and have more cultural work to do in order to forge positive relationships with the community, parents, and students. Teachers with divergent cultural capital are forced to find a balance between staying true to what they value while still respecting the local culture.

Student Relationships. The role of cultural capital, insofar as shared values, within students' educational relationships was explored in terms of students' responses to teachers and relationships with each other. Student-teacher relationships were perceived as being impacted by cultural difference, with outsider teachers described as not understanding the children and not having "the connection":

> … when we get teachers in here who don't know the culture, it's a culture shock – when we happen to get one in here who just doesn't seem to click with the students, then that student is with that teacher for the entire day…

Outsider teachers were perceived as being stricter than local teachers, particularly those teachers who had previously taught in the U.S. or Canada, as evident in this statement from a young adult in the community:

> … they [the current school authorities] have a lot more rules which comes from having a lot of teachers that are not from here – back then teachers were from here and were more familiar with the limits of discipline or rules – now they have a lot of them that come from Canada or more public school systems where it's [mimes slapping a desk], you can't do this and you can't do that… they don't understand – wouldn't have necessarily rebelled against somebody from here but since outside… you come from a public school system, what do you know about a private Christian school system?…

The reported response of the student body to some outsider teachers approximated an oppositional peer environment:

> … if a teacher from here would have made a rule, they would have understood the culture that the children are living in so they wouldn't have made a rule like that anyway – the students automatically rebel because that teacher is not from here: who do they think they are?...

> … new teacher comes in and the students know each other – the students can also group against them to make it difficult – try to prevent the problem from getting there…

A young outsider teacher working in the Old Colony community of Tall Tree Hill said: "to get to the students you have to want to understand them too… to help them, have to

understand where they're coming from too." With students constituting the dominant cultural capital in this community, the authority and ability to relate of teachers who don't share in that cultural capital is impaired.

Likely because of the largely homogeneous student body, diversity or dissonant values were not mentioned as factors influencing student relationships. Though the students "have their cliques and spats," adults and the youth reported that classmates generally get along. Students being reprimanded for things like "disrespect for each other – calling names and humiliating, degrading, embarrassing other students…" were not linked to cultural differences, but rather described as "normal things that kids do – kids are kids wherever you are…" Though there is some diversity in the student body, in terms of race, religion, and community membership, it's minimal and mostly a result of intermarriage with non-Mennonite Belizeans. One respondent described the student body: "most of them are related anyway – cousins or second cousins." This community emphasizes interpersonal relationships and the opportunity to learn to socialize within community schooling is considered an advantage over home schooling. Consistent with cultural reproduction theory, schooling was described by an outsider teacher as "more training – social skills." Greenfield experiences cultural dissonance within student-teacher and parent-teacher interactions rather than within the peer group, mostly as a result of having to hire teachers from outside of the community.

CONCLUSION

It seems apparent that there is a constancy of cultural capital, in the sense of shared values, across the residents and social institutions of the Mennonite community of Greenfield. Spirituality, the community itself, and education were all common themes within the descriptions of the values of the school, church and community. Not only did these Mennonites separate from other cultures and establish an isolated community because of these shared values, but social institutions have been created and interact toward the purpose of maintaining the cohesion and integrity of the value system. Through these means, a definitive majority cultural capital is established, is shared by the majority of the community members, and is the foundation for the school system. As more recent cultural capital research would predict, these shared values did facilitate better communication and understanding within nearly all of the educational relationships; discipline problems were minimal and the mission of the education system was generally clear. Also consistent with theory, teachers who were not from Greenfield, or who did not share in the community's cultural capital, experienced a marked increase in dissonance with both parents and students, to the detriment of their educating efforts. Outsider teachers had a harder time building relationships with parents, experienced more resistance from students, and were taxed by the challenge of determining how to respond to students whose cultural capital was different from their own. These findings confirm that shared cultural capital, or shared values and cultural understanding, are important in the educational setting. Proponents of cultural sensitivity would argue that the

expectations, curriculum and pedagogy of American schools and teachers could better accommodate its diverse student bodies.

It is interesting, though, that the size and homogeneity of the community did not completely eradicate dissension between parents and both the school system and teachers. Social capital was abundant in Greenfield; Portes (1998:22), though, emphasizes that the downsides of social capital should be considered too: "Social ties can bring about greater control over wayward behavior and provide privileged access to resources; they can also restrict individual freedoms and bar outsiders from gaining access to the same resources through particularistic preferences." Outsider teachers were the most negatively effected by the size and cohesion of the community but Greenfield's social capital was also a factor for teachers from the community, in that it became difficult to maintain a separation between their private and professional lives. Moreover, the values of community members were actually not perfectly homogeneous which led to dissension (the curriculum, candy in the classroom, etc.), as is evident in other Mennonite communities that have moved further away from religious consensus (Roessingh and Schoonderwoerd 2005). Variation in parental interaction with the school and teachers was attributed to diverse education levels, religious beliefs and work experiences, all of which could be characterized as differences in cultural capital or to the inevitable diversity of any group of humans. Doherty states (2004:715) that "culture is almost never perfectly shared by all members of a community or group"; in regards to education policies that emphasize standardization, not only does homogeneity of cultural capital seem unrealistic for a country of America's size and diversity, but is possibly counter to other central American values.

On the other hand, the variation in parental interaction with the school system that is attributable to gaps in cultural capital may be occurring as a result of recent transformations in religious, education and economic philosophy. The community members who are keeping pace with the majority cultural capital of the community feel aligned with the school system and are more receptive to interaction with the teachers. It is important not to forget the inherent role of stratification within social and cultural reproduction. From the perspective that the legitimate cultural capital within a society is not intrinsically of higher worth, but rather the culture of the dominant group, the disadvantage of those without comparable access to the majority culture is perpetuated within major social institutions. Though social stratification is not as evident in Greenfield as it is in America, Fave and Hillery (1980:79) note that intentional communities stave off inequality "through a high level of value integration"; as values are becoming less integrated in Greenfield, variation in income and education levels were increasingly evident. A conundrum for the proponents of cultural sensitivity is the fact that schools are responsible for socializing students to be successful within the workforce, which is founded in the majority cultural capital in both Greenfield and America.

Lastly, in a combination of natural human variation and power struggles, the very nature of education may give rise to some dissension. Parents in Greenfield, like parents in America, often sided with their own children and became defensive when fault was found. Comparable to the social structure of Greenfield in some ways, a study of a Trappist monastery found that inequality did exist despite norms of egalitarianism but that social status was based more on authority or longevity in the community than on power (Fave and Hillery 1980). The role of a teacher inherently involves some amount of societal authority, which was perceived by some parents as intimidating or as censure of their family. Though situations like these were seemingly exacerbated for parents with less education or less stature in the community, parental dissatisfaction with teachers and the school system did not always coincide with differences in cultural capital. Similarly, Lareau (2003), in her study of cultural capital within America, found that both middle class and working class parents critiqued teachers. In sum, cultural capital is not a sufficient explanation for all dissonance that occurs in the educational setting.

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